Dell™ Latitude™ E4300 Service Manual

Troubleshooting
Before Working on Your Computer
Specifications
Battery Slice
Hard Drive
Wireless Local Area Network (WLAN) Card
Wireless Wide Area Network (WWAN) Card
Memory
Latitude On™ Card
LED Dashboard Cover
Keyboard
Display Assembly
Camera
Palm Rest
Wireless Personal Area Network (WPAN) With Bluetooth® Wireless Technology
Smart Card
System Fan
Optical Drive
Radio Switch Board
Coin-Cell Battery
Speaker Assembly
System Board
Flashing the BIOS
Processor Thermal-Cooling Assembly
DC-In Power Assembly
Finding Information
Getting Help

Notes, Notices, and Cautions

NOTE: A NOTE indicates important information that helps you make better use of your computer.

NOTICE: A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

CAUTION: A CAUTION indicates a potential for property damage, personal injury, or death.

If you purchased a Dell™ n Series computer, any references in this document to Microsoft® Windows® operating systems are not applicable.

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation.

Information in this document is subject to change without notice.
© 2008–2009 Dell Inc. All rights reserved.

Reproduction of this material in any manner whatsoever without the written permission of Dell Inc. is strictly forbidden.

Trademarks used in this text: *Dell*, the *DELL* logo, *Latitude, and Latitude On* are trademarks of Dell Inc.; *Bluetooth* is a registered trademark owned by Bluetooth SIG, Inc., and is used by Dell under license; *Microsoft*, *Windows*, *Windows Vista*, *Outlook*, and the *Windows Vista* start button logo are either trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries.

Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Dell Inc. disclaims any proprietary interest in trademarks and trade names other than its own.

September 2009 Rev. A03

Back to Contents Page

Before Working on Your Computer

Dell™ Latitude™ E4300 Service Manual

- Recommended Tools
- What You Need to Know For Your Safety
- After Working on Your Computer

This document provides procedures for removing and installing the components in your computer. Unless otherwise noted, each procedure assumes that:

- You have performed the steps in this section.
- You have read the safety information that shipped with your computer.
- When replacing a component, you have already removed the original, if installed.

NOTE: The color of your computer and certain components may appear differently than shown in this document.

Recommended Tools

The procedures in this document may require the following tools:

- Small flat-blade screwdriver
- Phillips screwdriver
- Small plastic scribe
- Flash BIOS update (see the Dell Support website at **support.dell.com**)

What You Need to Know For Your Safety

Use the following safety guidelines to help protect your computer from potential damage and to help ensure your own personal safety.

CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface, such as a connector on the back of the computer.

NOTICE: Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component such as a processor by its edges, not by its pins.

NOTICE: When disconnecting a cable, pull on the cable's connector or on its strain-relief loop, not on the cable itself. For cable connectors with locking tabs, press inward on the locking tabs to release the connector. When connecting a cable, ensure that the connectors are correctly oriented and aligned to avoid damage to the connector and/or the connector's pins.

1. Ensure that the work surface is flat and clean to prevent the computer cover from being scratched.
2. Shut down your computer.
   - *In Microsoft® Windows® Vista®*, click **Start** , click the arrow icon, and then click **Shut Down** to turn off your computer.
   - *In Microsoft Windows XP*, click **Start**→ **Shutdown**→ **Shutdown**.

   NOTE: Ensure that the computer is off and not in a power management mode. If you cannot shut down the computer using the operating system, press and hold the power button for 6 seconds.
3. Disconnect your computer and all attached devices from their electrical outlets.

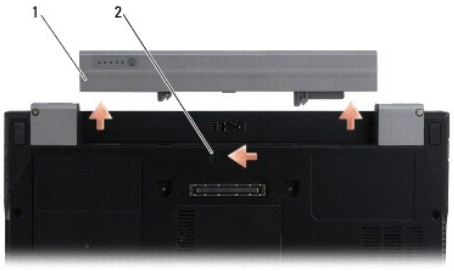
NOTICE: To disconnect a network cable, first unplug the cable from your computer, and then unplug it from the network wall jack.

4. Disconnect any telephone or network cables from the computer.
5. Remove any installed cards from the smart card slot and the 8-in-1 memory card reader.

NOTICE: To help prevent damage to the system board, you must remove the battery from the battery bay before you service the computer.

NOTE: To avoid damage to the computer, use only the battery designed for this particular Dell™ computer. Do not use batteries designed for other Dell computers.

6. Remove the battery:
   - Turn the computer over.
   - Slide the battery lock to the open position.
   - Slide the battery out of the battery bay.



1	battery	2	battery release latch

7. Turn the computer top-side up, open the display, and press the power button to ground the system board.

After Working on Your Computer

After you have completed the replacement procedures, ensure you connect the external devices, cards, cables, and so on, before turning on your computer.

NOTE: To avoid damage to the computer, use only the battery designed for this particular Dell computer. Do not use batteries designed for other Dell computers.

1. Connect any external devices, such as a port replicator, battery slice, or cool slice, and replace any cards (such as a smart card).
2. Connect any telephone or network cables to your computer.
3. Replace the battery. Slide the battery into the battery bay until it clicks into place.
4. Connect your computer and all attached devices to their electrical outlets.
5. Turn on your computer.

Back to Contents Page

Back to Contents Page

Flashing the BIOS

Dell™ Latitude™ E4300 Service Manual

1. Download the BIOS utility from the Dell™ Support website at **support.dell.com** and save it to your Windows® desktop.
2. After the download completes, double-click the BIOS utility file icon.
3. In the **Dell BIOS Flash** window, click **Continue**.
4. When the reboot message appears, click **OK** and wait for the computer to restart.

Back to Contents Page

Back to Contents Page

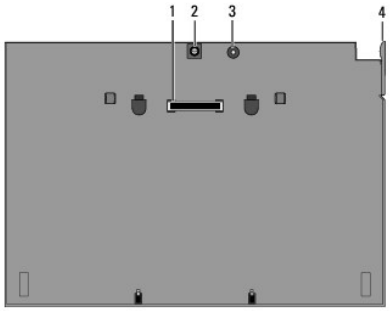
Battery Slice

Dell™ Latitude™ E4300 Service Manual

- Top View
- Bottom View
- Detaching the Battery Slice
- Attaching the Battery Slice

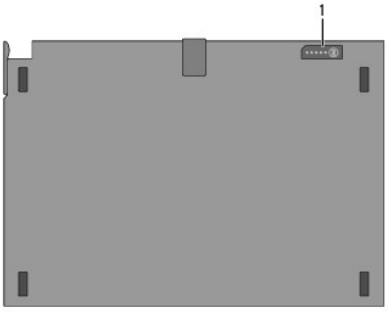
The battery slice attaches to the bottom of the laptop, and can be charged while attached to the laptop or separately.

Top View



1	docking connector	2	AC adapter connector
3	power status light	4	release lever

Bottom View



1	charge gauge lights		

Detaching the Battery Slice

1. Save and close any open files, and exit any open programs.
2. Set the power management settings so that the computer does not enter sleep, standby, or hibernate mode when you close (lower) the display:

   Microsoft® Windows® XP

   a. Click **Start**→ **Control Panel**→ **Performance and Maintenance**→ **Power Options**→ **Advanced**.

   b. Under **When I close the lid of my portable computer**, select **Do nothing**.

   Windows Vista®

   a. Click **Start** → **Control Panel**→ **Mobile PC**→ **Power Options**→ **Change what closing the lid does**.

b. Under the **When I close the lid** drop-down menu, select **Do nothing.**

c. Pull the laptop release lever to release the laptop from the battery slice.

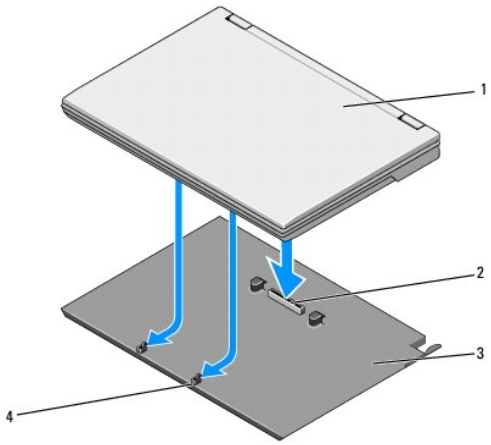
1	battery slice	2	release lever

4. Lift the back edge of the laptop up and slide the laptop toward the back of the battery slice.

Attaching the Battery Slice

NOTE: After attaching the battery slice to your laptop, the laptop AC adapter can charge the battery slice through the laptop AC adapter connector.

1. While holding the laptop at a 30-degree angle to the battery slice, set the slots on the bottom of the laptop onto the battery slice hooks, and then lower the back of the laptop onto the battery slice. The laptop docking connector should engage the battery slice docking connector.



1	laptop	2	docking connector
3	battery slice	4	battery slice hooks (2)

2. Press the laptop onto the battery slice until you feel a click to indicate that the laptop is firmly seated.

3. Turn on the laptop.

Back to Contents Page

Back to Contents Page

Wireless Personal Area Network (WPAN) With Bluetooth® Wireless Technology

Dell™ Latitude™ E4300 Service Manual

- Removing the WPAN/Bluetooth Card
- Replacing the WPAN/Bluetooth Card

CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching a connector on the back panel of the computer.

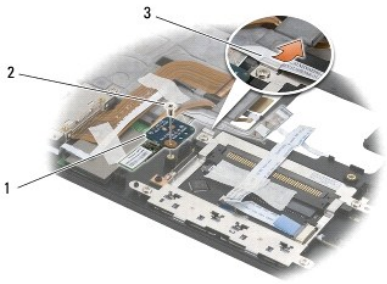
NOTICE: To prevent damage to the system board, remove the main battery before you service the computer.

Your computer supports a Wireless Personal Area Network (WPAN) card with Bluetooth® wireless technology. If you ordered a WPAN card with your computer, the card is already installed.

Removing the WPAN/Bluetooth Card

The WPAN/Bluetooth card is located on the underside of the palm rest assembly.

1. Follow the instructions in What You Need to Know For Your Safety.
2. Remove the LED dashboard cover (see Removing the LED Dashboard Cover).
3. Remove the keyboard (see Removing the Keyboard).
4. Remove the display assembly (see Replacing the Display Assembly).
5. Remove the palm rest (see Removing the Palm Rest).
6. Turn the palm rest upside-down.
7. Remove the M2 x 3-mm screw securing the card to the system board.



1	WPAN/Bluetooth card	2	M2 x 3-mm screw
3	cable guide		

8. Gently free the card cable from the cable guide.

NOTICE: Be careful when removing the card to avoid damaging the card, card cable, or surrounding components.

9. Lift the card away from the system board.

Replacing the WPAN/Bluetooth Card

NOTE: This procedure assumes that you have completed the removal procedure first.

1. Reseat the WPAN/Bluetooth card on the underside of the palm rest.
2. Replace the card cable in the metal guide.
3. Replace the M2 x 3-mm screw to secure the card to the system board.
4. Replace the palm rest (see Replacing the Palm Rest).
5. Replace the display assembly (see Replacing the Display Assembly).
6. Replace the keyboard (see Replacing the Keyboard).
7. Replace the LED dashboard cover (see Replacing the LED Dashboard Cover).
8. Follow the instructions in After Working on Your Computer.

Back to Contents Page

Back to Contents Page

Camera

Dell™ Latitude™ E4300 Service Manual

- Removing the Camera
- Replacing the Camera

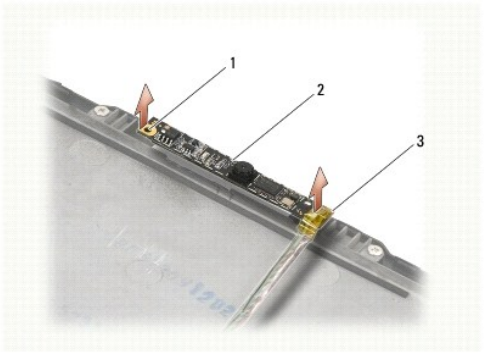
CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as the back panel) on the computer.

If you ordered a camera with your computer, the camera is already installed.

Removing the Camera

1. Follow the instructions in What You Need to Know For Your Safety.
2. Remove the LED dashboard cover (see Removing the LED Dashboard Cover).
3. Remove the keyboard (see Removing the Keyboard).
4. Remove the display assembly (see Removing the Display Assembly).
5. Remove the display bezel (see Removing the Display Bezel).
6. Remove the display panel (see Removing the Display Panel).
7. Remove the display hinges (see Removing the Display Hinges).
8. Lift the camera board from the display back cover.
9. Free the display/camera cable assembly from the display hinges.



1	alignment post (2)	2	camera board
3	display/camera cable assembly		

Replacing the Camera

NOTE: This procedure assumes that you have completed the removal procedure first.

1. Align the camera board to the alignment posts on the display cover.
2. Re-thread the display cables through the hinges.

3. Replace the display hinges (see Removing the Display Hinges).
4. Replace the display panel (see Replacing the Display Panel).
5. Replace the display bezel (see Replacing the Display Bezel).
6. Replace the display assembly (see Replacing the Display Assembly).
7. Follow the instructions in After Working on Your Computer.

Back to Contents Page

Back to Contents Page

Coin-Cell Battery

Dell™ Latitude™ E4300 Service Manual

- Removing the Coin-Cell Battery
- Replacing the Coin-Cell Battery

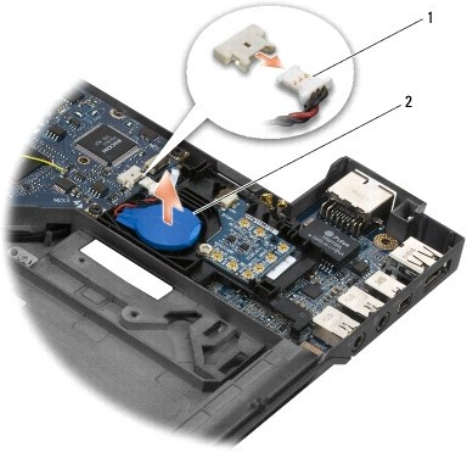
CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching a connector on the back panel of the computer.

NOTICE: To prevent damage to the system board, remove the main battery before you service the computer.

Removing the Coin-Cell Battery

1. Follow the instructions in What You Need to Know For Your Safety.
2. Remove the LED dashboard cover (see Removing the LED Dashboard Cover).
3. Remove the keyboard (see Removing the Keyboard).
4. Disconnect the battery cable from the system board.
5. Lift the battery out of the battery compartment.



1	battery cable and connector	2	coin-cell battery

Replacing the Coin-Cell Battery

NOTE: This procedure assumes that you have completed the removal procedure first.

1. Reconnect the battery cable to the system board.
2. Reseat the battery in the battery compartment.
3. Replace the keyboard (see Replacing the Keyboard).
4. Replace the LED dashboard cover (see Replacing the LED Dashboard Cover).
5. Follow the instructions in After Working on Your Computer.

Back to Contents Page

Back to Contents Page

Processor Thermal-Cooling Assembly

Dell™ Latitude™ E4300 Service Manual

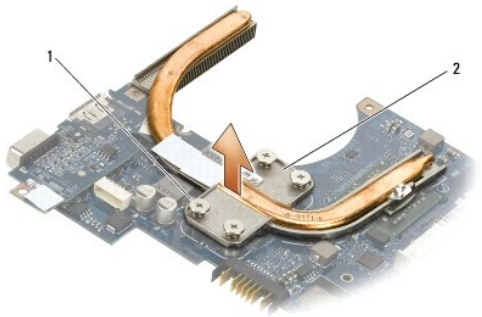
- Removing the Processor Thermal-Cooling Assembly
- Replacing the Processor Thermal-Cooling Assembly

Removing the Processor Thermal-Cooling Assembly

CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as the back panel) on the computer.

1. Follow the instructions in What You Need to Know For Your Safety.
2. Remove the hard drive (see Removing the Hard Drive).
3. Remove the LED dashboard cover (see Removing the LED Dashboard Cover).
4. Remove the keyboard (see Removing the Keyboard).
5. Remove the display assembly (see Removing the Display Assembly).
6. Remove the palm rest (see Removing the Palm Rest).
7. Remove the system fan (see Removing the System Fan).
8. Remove the optical drive (see Removing the Optical Drive).
9. Remove the system board (see Removing the System Board Assembly).
10. Place the system board upside-down on a clean, flat surface.



1	captive screws (4)	2	processor thermal-cooling assembly

11. In consecutive order, loosen the four captive screws (labeled "1" through "4") that secure the processor thermal-cooling assembly to the system board.
12. Remove the processor thermal-cooling assembly from the computer.

Replacing the Processor Thermal-Cooling Assembly

CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

NOTE: This procedure assumes that you have completed the removal procedure first.

1. Reseat the processor thermal-cooling assembly on the underside of the system board.
2. In consecutive order, tighten the four captive screws labeled "1" through "4."
3. Replace the system board (see Replacing the System Board Assembly).
4. Replace the optical drive (see Replacing the Optical Drive).
5. Replace the system fan (see Replacing the System Fan).
6. Replace the palm rest (see Replacing the Palm Rest).
7. Replace the display assembly (see Replacing the Display Assembly).
8. Replace the keyboard (see Replacing the Keyboard).
9. Replace the LED dashboard cover (see Replacing the LED Dashboard Cover).
10. Replace the hard drive (see Replacing the Hard Drive).
11. Follow the instructions in After Working on Your Computer.

Back to Contents Page

Back to Contents Page

DC-In Power Assembly

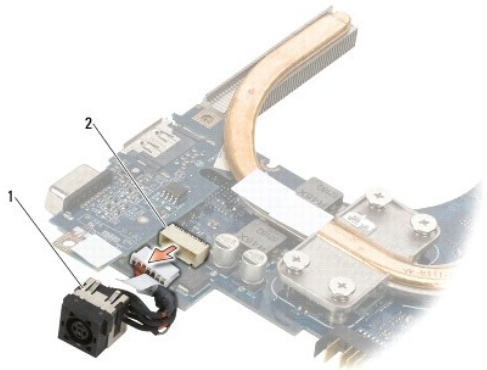
Dell™ Latitude™ E4300 Service Manual

- Removing the DC-In Power Assembly
- Replacing the DC-in Power Assembly

Removing the DC-In Power Assembly

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

1. Follow the instructions in What You Need to Know For Your Safety.
2. Remove the LED dashboard cover (see Removing the LED Dashboard Cover).
3. Remove the keyboard (see Removing the Keyboard).
4. Remove the display assembly (see Removing the Display Assembly).
5. Remove the palm rest (see Removing the Palm Rest).
6. Remove the system fan (see Removing the System Fan).
7. Remove the optical drive (see Removing the Optical Drive).
8. Disconnect the smart card cable.
9. Disconnect the speaker assembly cable.
10. Disconnect the coin-cell battery from the system board (see Removing the Coin-Cell Battery).
11. Remove the system board (see Removing the System Board Assembly); leave the DC-in power assembly attached to the system board.
12. Disconnect the DC-in power assembly from the underside of the system board.



1	DC-in power assembly	2	DC-in connector

Replacing the DC-in Power Assembly

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

1. Position the DC -in power assembly in the computer base, aligning the guides on the connector sides with the base.
2. Reconnect the DC -in power assembly to the connector on the underside of the system board.
3. Replace the system board (see Replacing the System Board Assembly).
4. Reconnect and reseat the coin-cell battery in the system board (see Replacing the Coin-Cell Battery).
5. Reconnect the speaker assembly cable.
6. Reconnect the smart card cable.
7. Replace the optical drive (see Replacing the Optical Drive).
8. Replace the system fan (see Replacing the System Fan).
9. Replace the palm rest (see Replacing the Palm Rest).
10. Replace the keyboard (see Replacing the Keyboard).
11. Replace the display assembly (see Replacing the Display Assembly).
12. Replace the hard drive (see Replacing the Hard Drive).
13. Follow the instructions in After Working on Your Computer.

Back to Contents Page

Back to Contents Page

Display Assembly

Dell™ Latitude™ E4300 Service Manual

- Types of Liquid Crystal Display (LCD) Covers
- Removing the Display Assembly
- Replacing the Display Assembly
- Removing the Display Bezel
- Replacing the Display Bezel
- Removing the Display Hinges
- Removing the Display Panel
- Replacing the Display Panel
- Replacing the Display Hinges
- Removing the LCD Cable
- Replacing the LCD Cable

CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

NOTICE: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as the back panel) on the computer.

Types of Liquid Crystal Display (LCD) Covers

The five LCD cover designs that can be ordered in different color options are:

- WLAN support only with short antenna cable:
  - No bump design
  - Short antenna cable (WLAN antenna cables connect to the radio switch board)
- WLAN support only with long antenna cable:
  - No bump design
  - Long antenna cables (system does not contain a radio switch board, and antenna cables route directly through the motherboard and to the WLAN card)
- WWAN and WLAN support only:
  - Single bump on the top of the LCD top cover
  - WLAN cables route to the radio switch board
  - WWAN cables route to the WWAN card
- Camera only support:
  - One bump on top of the LCD top cover
  - WLAN cables route to the radio switch board
  - No WWAN cables in this configuration
- WWAN and Camera bump support:
  - One bump on top of the LCD top cover
  - WLAN cables route to the radio switch board
  - WWAN cables route to the WWAN card

Removing the Display Assembly

1. Follow the instructions in What You Need to Know For Your Safety.
2. Close the display and turn the computer upside-down.
3. Remove the four M2.5 x 4-mm screws securing the display assembly to the back of the computer.

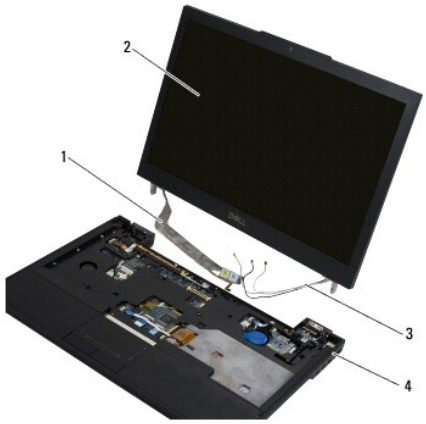
4. Turn the computer rightside-up and open the display 180 degrees.
5. Remove the LED dashboard cover (see Removing the LED Dashboard Cover).
6. Gently lift the display to unseat its hinges, taking care not to pull the display cables. Lay the display assembly flat.
7. Remove the keyboard (see Removing the Keyboard).

NOTICE: Ensure that the display cable and the antenna cables do not get caught beneath the guide tabs on the palm rest.

8. Remove the display cable from the system board by pulling on the blue tab next to the display cable connector.
9. Carefully remove the display cable by moving it away from the metal and plastic cable guide tabs.

NOTE: There are five antenna cables attached to the display assembly. The three shorter cables (black, white, and gray) are connected to the top of the system board; the two longer cables (gray/black and white/gray) are threaded down through a hole in the system board to the WLAN/WWAN compartment at the bottom of the computer.

10. Turn the computer upside-down.
11. Remove the WLAN/WWAN cover, and loosen the two antenna cables by moving them out of the cable guides.
12. Slide the two antenna cables through the hole in the palm rest.
13. Turn the computer rightside-up.
14. Disconnect the three antenna cables from the radio switch board. The display antenna cables (gray, white, and black) are situated in vertical formation on the upper-right side of the radio switch board.
15. Lift the display and cables away from the computer.



1	display cable	2	display
3	antenna cables	4	computer base

Replacing the Display Assembly

NOTE: This procedure assumes that you have completed the removal procedure first.

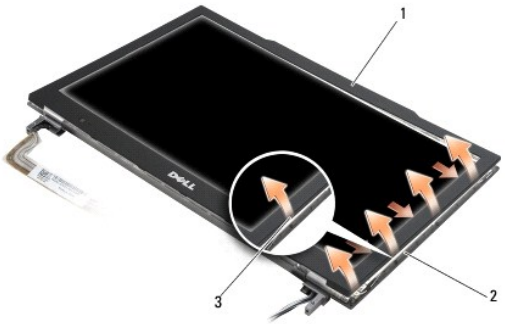
1. Thread the two longer antenna cables through the hole in the system board, located just below the radio switch board.
2. Turn the computer over and thread the cables through the cable guides in the WLAN/WWAN compartment.
3. Replace the WLAN/WWAN cover, and then turn the computer rightside- up.
4. Reconnect the three shorter antenna cables to their respective labeled ports, threading each cable through the plastic cable guide closest to its port.
5. Carefully reseat the display cable into its guide tabs.
6. Reconnect the display cable by placing it above the display cable connector and snapping it into place.
7. Lift the display assembly to a vertical position, and then lower it to reseat the hinges.
8. Replace the keyboard (see Replacing the Keyboard).
9. Replace the LED dashboard cover (see Replacing the LED Dashboard Cover).
10. Close the display and turn the computer upside-down.
11. Replace the four M2.5 x 4-mm screws securing the display assembly to the back of the computer.
12. Follow the instructions in After Working on Your Computer.

Removing the Display Bezel

1. Follow the instructions in What You Need to Know For Your Safety.
2. Remove the display assembly (see Removing the Display Assembly).

NOTE: Removal of the bezel from the display back cover requires extreme care to avoid damaging the bezel.

3. Starting from the edges, at the middle bottom of the display panel, lift the right, left, and top corners of the panel using a rolling motion. Leave the bottom corners alone for the moment.
4. Starting at the edges of the bottom of the display panel, slide the entire bezel downwards.



1	bezel	2	display panel
3	Edge of the middle bottom		

Replacing the Display Bezel

NOTE: This procedure assumes that you have completed the removal procedure first.

Starting at any corner, use your fingers to gently snap the bezel into place to secure it to the display panel.

Removing the Display Hinges

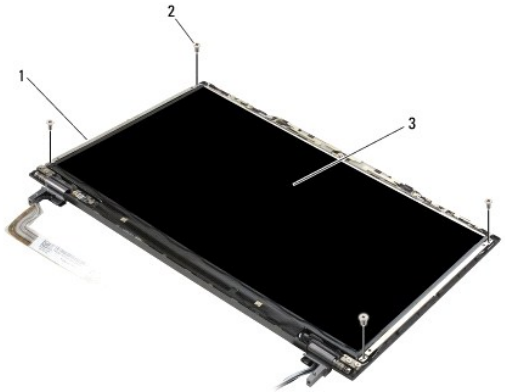
1. Follow the instructions in What You Need to Know For Your Safety.
2. Remove the display assembly (see Removing the Display Assembly).
3. Remove the display bezel (see Removing the Display Bezel).
4. Remove the four M2.5 x 5-mm screws (two per side) that secure the display hinges to the display back cover.

1	hinges (2)	2	M2.5 x 5-mm screws (4)

5. Free the hinges from the display cable (left side) and display antenna cables (right side).

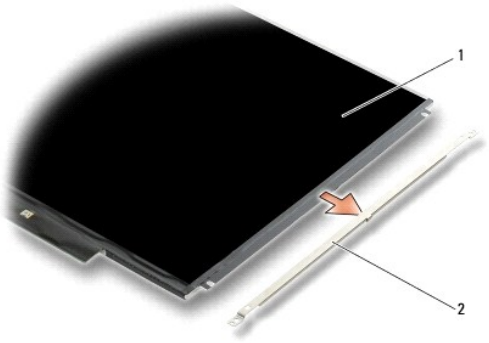
Removing the Display Panel

1. Follow the instructions in What You Need to Know For Your Safety.
2. Remove the display assembly (see Removing the Display Assembly).
3. Remove the display bezel (see Removing the Display Bezel).
4. Remove the four M2 x 3-mm screws securing the display brackets (two on each side of the display panel).



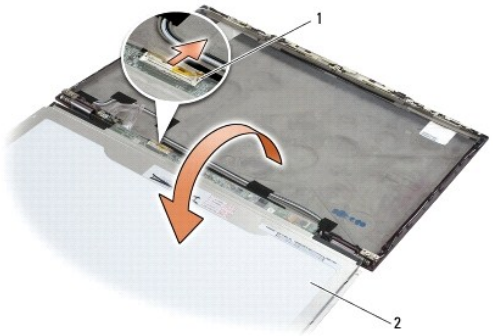
1	display panel brackets (2)	2	M2 x 3-mm screws (4)
3	display panel		

5. Gently remove each bracket by pulling it away from the display.



1	display panel	2	display panel brackets (2)

6. Lift the display panel away from the display back cover and rotate it forward.



1	LCD flex-cable connector	2	display panel

7. Use the pull-tab to disconnect the LCD flex-cable connector from the inverter connector.

Replacing the Display Panel

NOTE: This procedure assumes that you have completed the removal procedure first.

1. Reconnect the LCD flex-cable connector to the inverter connector.
2. Replace the display panel inside the display back cover.
3. Replace each display panel bracket (one on each side of the panel), and then secure it by replacing the two M2 x 3-mm screws.
4. Replace the display bezel (see Replacing the Display Bezel).
5. Replace the display assembly (see Replacing the Display Assembly).
6. Follow the instructions in After Working on Your Computer.

Replacing the Display Hinges

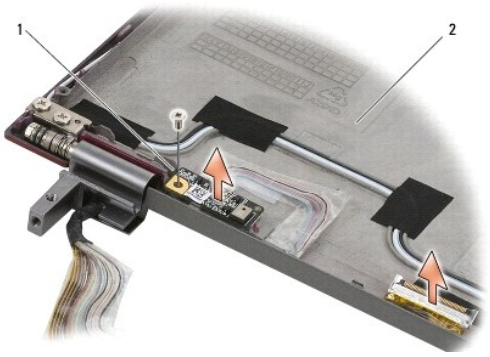
NOTE: This procedure assumes that you have completed the removal procedure first.

1. Re-thread the display cables through the hinges.
2. Reseat the hinges, and then replace the four M2.5 x 5-mm screws (two per side) that secure the display hinges to the display cover.

3. Replace the display bezel (see Replacing the Display Bezel).
4. Replace the display assembly (see Replacing the Display Assembly).
5. Follow the instructions in After Working on Your Computer.

Removing the LCD Cable

1. Follow the instructions in What You Need to Know For Your Safety.
2. Remove the display assembly (see Removing the Display Assembly).
3. Remove the display bezel (see Removing the Display Bezel).
4. Remove the display panel (see Removing the Display Panel).
5. Remove the M2 x 5-mm screw securing the LCD cable board to the display back cover.
6. Lift the LCD cable board from the display back cover.



1	LCD cable board	2	display back cover

Replacing the LCD Cable

NOTE: This procedure assumes that you have completed the removal procedure first.

1. Reseat the LCD cable board in the display back cover.
2. Replace the M2 x 5-mm screw securing the LCD cable board to the display base.
3. Replace the display panel (see Replacing the Display Panel).
4. Replace the display bezel (see Replacing the Display Bezel).
5. Replace the display assembly (see Replacing the Display Assembly).
6. Follow the instructions in After Working on Your Computer.

Back to Contents Page

Back to Contents Page

Smart Card

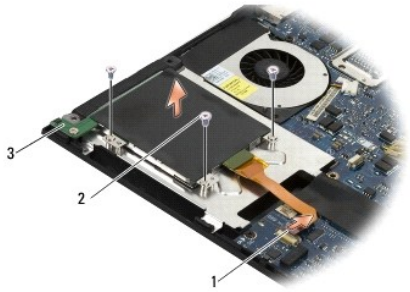
Dell™ Latitude™ E4300 Service Manual

- Removing the Smart Card
- Replacing the Smart Card

Removing the Smart Card

CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

1. Complete the steps in What You Need to Know For Your Safety.
2. Remove the hard drive (see Removing the Hard Drive).
3. Remove the display assembly (see Removing the Display Assembly).
4. Remove the keyboard (see Removing the Keyboard).
5. Remove the palm rest assembly (Removing the Palm Rest).
6. Remove the four M2 x 3-mm screws that secure the card to the computer base.
7. Disconnect the card cable from the system board.
8. Lift the card from the system board.



1	smart card cable	2	M2 x 3-mm screw (4)
3	smart card		

Replacing the Smart Card

NOTE: This procedure assumes that you have completed the removal procedure first.

1. Reseat the smart card.
2. Replace the four M2 x 3-mm screws to secure the card to the computer base.
3. Reconnect the card cable to the system board.
4. Replace the palm rest assembly (Replacing the Palm Rest).
5. Replace the keyboard (see Replacing the Keyboard).
6. Replace the display assembly (see Replacing the Display Assembly).

7. Replace the hard drive (see Replacing the Hard Drive).

8. Follow the instructions in After Working on Your Computer.

Back to Contents Page

Back to Contents Page

System Fan

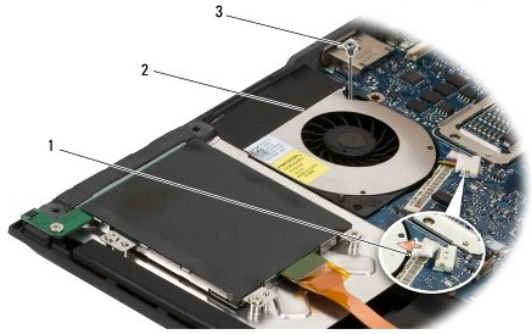
Dell™ Latitude™ E4300 Service Manual

- Removing the System Fan
- Replacing the System Fan

CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

Removing the System Fan

1. Follow the instructions in What You Need to Know For Your Safety.
2. Remove the LED dashboard cover (see Removing the LED Dashboard Cover).
3. Remove the keyboard (see Removing the Keyboard).
4. Remove the display assembly (see Removing the Display Assembly).
5. Remove the palm rest (see Removing the Palm Rest).
6. Disconnect the fan connector from the system board.
7. Remove the M2.5 x 5-mm screw securing the fan to the computer base.
8. Using the tab on the left side of the fan, lift the fan up at an angle to remove it.



1	fan connector	2	fan
3	M2.5 x 5-mm screw		

Replacing the System Fan

NOTE: This procedure assumes that you have completed the removal procedure first.

1. Reseat the fan in the computer base, aligning the screws hole in the fan with the screw hole in the computer base.
2. Install the M2.5 x 5-mm screw to secure the fan.
3. Reconnect the fan connector to the system board connector.
4. Replace the palm rest (see Replacing the Palm Rest).
5. Replace the display assembly (see Replacing the Display Assembly).
6. Replace the keyboard (see Replacing the Keyboard).

7. Replace the LED dashboard cover (see Replacing the LED Dashboard Cover).

8. Follow the instructions in After Working on Your Computer.

Back to Contents Page

Back to Contents Page

Finding Information

Dell™ Latitude™ E4300 Service Manual

NOTE: Some features or media may be optional and may not ship with your computer. Some features or media may not be available in certain countries.

NOTE: Additional information may ship with your computer.

Document/Media/Label	**Contents**
Service Tag / Express Service Code The Service Tag/Express Service Code is located on your computer.	• Use the Service Tag to identify your computer when you use **support.dell.com** or contact support. • Enter the Express Service Code to direct your call when contacting support. **NOTE:** Your Service Tag/Express Service Code is located on your computer.
Drivers and Utilities Media The *Drivers and Utilities* media is a CD or DVD that may have shipped with your computer.	• A diagnostic program for your computer • Drivers for your computer **NOTE:** Drivers and documentation updates can be found at **support.dell.com**. • Notebook System Software (NSS) • Readme files **NOTE:** Readme files may be included on your media to provide last-minute updates about technical changes to your computer or advanced technical-reference material for technicians or experienced users.
Operating System Media The *Operating System* media is a CD or DVD that may have shipped with your computer.	Reinstall your operating system
Safety, Regulatory, Warranty, and Support Documentation This type of information may have shipped with your computer. For additional regulatory information, see the Regulatory Compliance Homepage on **www.dell.com** at the following location: **www.dell.com / regulatory_compliance.**	• Warranty information • Terms and Conditions (U.S. only) • Safety instructions • Regulatory information • Ergonomics information • End User License Agreement
Service Manual The *Service Manual* for your computer can be found at **support.dell.com**.	• How to remove and replace parts • How to configure system settings • How to troubleshoot and solve problems
Dell Technology Guide The *Dell Technology Guide* is available at **support.dell.com.**	• About your operating system • Using and maintaining devices • Understanding technologies such as RAID, Internet, Bluetooth® wireless technology, e-mail, networking, and more
Microsoft® Windows® License Labe Your Microsoft Windows License is located on your computer.	• Provides your operating system product key

Back to Contents Page

Back to Contents Page

Hard Drive

Dell™ Latitude™ E4300 Service Manual

- Removing the Hard Drive
- Replacing the Hard Drive

NOTE: Dell does not guarantee compatibility or provide support for hard drives from sources other than Dell.

Removing the Hard Drive

CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

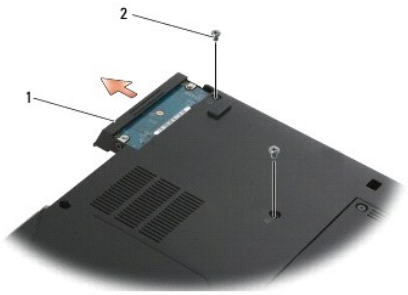
CAUTION: *Do not touch* **the metal housing of the hard drive if you remove the hard drive from the computer while the drive is hot.**

NOTICE: To prevent data loss, turn off your computer before removing the hard drive. Do not remove the hard drive while the computer is on in sleep mode.

NOTICE: Hard drives are extremely fragile; even a slight bump can damage the drive.

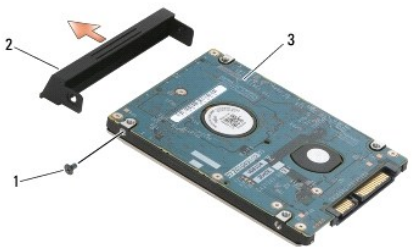
1. Follow the instructions in What You Need to Know For Your Safety.
2. Close the display and place the computer upside-down on a clean, flat surface.
3. Remove the two M3 x 3-mm screws securing the hard drive. Each screw is marked by a symbol on the bottom of the computer base.
4. Slide the hard drive out of the computer.

NOTICE: When the hard drive is not in the computer, store it in protective antistatic packaging.



1	hard drive	2	M3 x 3-mm screws (2)

5. Remove the M3 x 3-mm bezel screw and bezel from the hard drive.



1	M3 x 3-mm bezel screw	2	hard drive bezel
3	hard drive		

Replacing the Hard Drive

CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

NOTICE: Hard drives are extremely fragile. Exercise care when handling the hard drive.

NOTICE: Use firm and even pressure to slide the hard drive into place. Excessive force may result in damage to the connector.

NOTE: This procedure assumes that you have completed the removal procedure first.

1. Secure the bezel to the hard drive with the M3 x 3-mm screw.
2. Slide the hard drive into the hard drive connector until the drive is fully seated.
3. Replace the two M3 x 3-mm screws securing the hard drive.
4. Follow the instructions in After Working on Your Computer.
5. Start your computer.
6. Install the operating system, drivers, and utilities for your computer, as needed. For more information, see the *Setup and Quick Reference Guide that shipped with your computer or on* ***support.dell.com*****.**

Back to Contents Page

Back to Contents Page

Getting Help

Dell™ Latitude™ E4300 Service Manual

- Obtaining Assistance
- Problems With Your Order
- Product Information
- Returning Items for Warranty Repair or Credit
- Before You Call
- Contacting Dell

Obtaining Assistance

CAUTION: If you need to remove the computer cover, first disconnect the computer power and modem cables from all electrical outlets. Follow the safety instructions that shipped with your computer.

If you experience a problem with your computer, you can complete the following steps to diagnose and troubleshoot the problem:

1. See Troubleshooting for information and procedures that pertain to the problem your computer is experiencing.
2. See Dell Diagnostics for procedures on how to run Dell Diagnostics.
3. Fill out the Diagnostics Checklist.
4. Use Dell's extensive suite of online services available at Dell Support (**support.dell.com**) for help with installation and troubleshooting procedures. See Online Services for a more extensive list of Dell Support online.
5. If the preceding steps have not resolved the problem, see Contacting Dell.

NOTE: Call Dell Support from a telephone at or near the affected computer so that the support staff can assist you with any necessary procedures.

NOTE: Dell's Express Service Code system may not be available in all countries.

When prompted by Dell's automated telephone system, enter your Express Service Code to route the call directly to the proper support personnel. If you do not have an Express Service Code, open the **Dell Accessories** folder, double-click the **Express Service Code** icon, and follow the directions.

For instructions on using the Dell Support, see Technical Support and Customer Service.

NOTE: Some of the following services are not always available in all locations outside the continental U.S. Call your local Dell representative for information on availability.

Technical Support and Customer Service

Dell's support service is available to answer your questions about Dell™ hardware. Our support staff uses computer-based diagnostics to provide fast, accurate answers.

To contact Dell's support service, see Before You Call, and then see the contact information for your region or go to **support.dell.com**.

DellConnect™

DellConnect is a simple online access tool that allows a Dell service and support associate to access your computer through a broadband connection, diagnose your problem and repair it all under your supervision. For more information, go to **support.dell.com** and click **DellConnect**.

Online Services

You can learn about Dell products and services at the following websites:

www.dell.com

www.dell.com/ap (Asian/Pacific countries only)

www.dell.com/jp (Japan only)

www.euro.dell.com (Europe only)

www.dell.com/la (Latin American and Caribbean countries)

www.dell.ca (Canada only)

You can access Dell Support through the following websites and e-mail addresses:

- Dell Support websites:

  support.dell.com

  support.jp.dell.com (Japan only)

  support.euro.dell.com (Europe only)

- Dell Support e-mail addresses:

  mobile_support@us.dell.com

  support@us.dell.com

  la-techsupport@dell.com (Latin America and Caribbean countries only)

  apsupport@dell.com (Asian/Pacific countries only)

- Dell Marketing and Sales e-mail addresses:

  apmarketing@dell.com (Asian/Pacific countries only)

  sales_canada@dell.com (Canada only)

- Anonymous file transfer protocol (FTP):

  ftp.dell.com – log in as user anonymous, and use your e-mail address as your password

AutoTech Service

Dell's automated support service—AutoTech—provides recorded answers to the questions most frequently asked by Dell customers about their laptop and desktop computers.

When you call AutoTech, use your touch-tone telephone to select the subjects that correspond to your questions. For the telephone number to call for your region, see Contacting Dell.

Automated Order-Status Service

To check on the status of any Dell products that you have ordered, you can go to **support.dell.com**, or you can call the automated order-status service. A recording prompts you for the information needed to locate and report on your order. For the telephone number to call for your region, see Contacting Dell.

Problems With Your Order

If you have a problem with your order, such as missing parts, wrong parts, or incorrect billing, contact Dell for customer assistance. Have your invoice or packing slip available when you call. For the telephone number to call for your region, see Contacting Dell.

Product Information

If you need information about additional products available from Dell, or if you would like to place an order, visit the Dell website at **www.dell.com**. For the telephone number to call for your region or to speak to a sales specialist, see Contacting Dell.

Returning Items for Warranty Repair or Credit

Prepare all items being returned, whether for repair or credit, as follows:

1. Call Dell to obtain a Return Material Authorization Number, and write it clearly and prominently on the outside of the box.

   For the telephone number to call for your region, see Contacting Dell. Include a copy of the invoice and a letter describing the reason for the return.

2. Include a copy of the Diagnostics Checklist (see Diagnostics Checklist), indicating the tests that you have run and any error messages reported by the Dell Diagnostics (see Contacting Dell).

3. Include any accessories that belong with the item(s) being returned (power cables, software floppy disks, guides, and so on) if the return is for credit.

4. Pack the equipment to be returned in the original (or equivalent) packing materials.

You are responsible for paying shipping expenses. You are also responsible for insuring any product returned, and you assume the risk of loss during shipment to Dell. Collect On Delivery (C.O.D.) packages are not accepted.

Returns that are missing any of the preceding requirements will be refused at Dell's receiving dock and returned to you.

Before You Call

NOTE: Have your Express Service Code ready when you call. The code helps Dell's automated-support telephone system direct your call more efficiently. You may also be asked for your Service Tag (located on the back or bottom of your computer).

Remember to fill out the Diagnostics Checklist (see Diagnostics Checklist). If possible, turn on your computer before you call Dell for assistance and call from a telephone at or near the computer. You may be asked to type some commands at the keyboard, relay detailed information during operations, or try other troubleshooting steps possible only at the computer itself. Ensure that the computer documentation is available.

CAUTION: Before working inside your computer, follow the safety instructions in the documentation that shipped with your computer.

Diagnostics Checklist
Name:
Date:
Address:
Phone number:
Service Tag (bar code on the back or bottom of the computer):
Express Service Code:
Return Material Authorization Number (if provided by Dell support technician):
Operating system and version:
Devices:
Expansion cards:
Are you connected to a network? Yes No
Network, version, and network adapter:
Programs and versions:
See your operating system documentation to determine the contents of the system's start-up files. If the computer is connected to a printer, print each file. Otherwise, record the contents of each file before calling Dell.
Error message, beep code, or diagnostic code:
Description of problem and troubleshooting procedures you performed:

Contacting Dell

For customers in the United States, call 800-WWW-DELL (800-999-3355).

NOTE: If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

1. Visit **support.dell.com**, and verify your country or region in the **Choose A Country / Region** drop-down menu at the bottom of the page.
2. Click **Contact Us** on the left side of the page, and select the appropriate service or support link based on your need.
3. Choose the method of contacting Dell that is convenient for you.

Back to Contents Page

Back to Contents Page

Keyboard

Dell™ Latitude™ E4300 Service Manual

- Removing the Keyboard
- Replacing the Keyboard

Removing the Keyboard

CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

NOTICE: The keycaps on the keyboard are fragile, easily dislodged, and time consuming to replace. Be careful when removing and handling the keyboard.

1. Follow the instructions in What You Need to Know For Your Safety.
2. Remove the LED dashboard cover (see Removing the LED Dashboard Cover).
3. Remove the three M2 x 3-mm screws at the top of the keyboard.

   NOTE: Lift the keyboard carefully to ensure that you do not pull on the display cable.

4. Lift the keyboard only enough to hold it up, and then slide it forward out of the computer.

   The connector is part of the keyboard assembly and slides out of its slot when you remove the keyboard.

1	M2 x 3-mm screws (3)	2	keyboard

Replacing the Keyboard

CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

NOTICE: The keycaps on the keyboard are fragile, easily dislodged, and time consuming to replace. Be careful when removing and handling the keyboard.

NOTICE: To avoid scratching the palm rest when replacing the keyboard, hook the tabs along the front edge of the keyboard into the palm rest first, and then secure the keyboard in place.

NOTE: This procedure assumes that you have completed the removal procedure first.

1. Insert the keyboard connector into the connector slot, being careful to insert the five tabs underneath the palm rest cover.
2. Replace the three M2 x 3-mm screws at the top of the keyboard.

1	M2 x 3-mm screws (3)	2	keyboard

3. Replace the LED dashboard cover (see Replacing the LED Dashboard Cover).
4. Follow the instructions in After Working on Your Computer.

Back to Contents Page

Back to Contents Page

Latitude ON™ Card

Dell™ Latitude™ E4300 Service Manual

- Removing the Latitude On Card
- Replacing the Latitude On Card

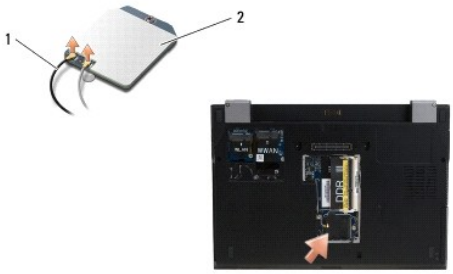
CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

If you ordered a Latitude On™ card with your computer, the card is already installed. It is located in the memory bay.

Removing the Latitude ON Card

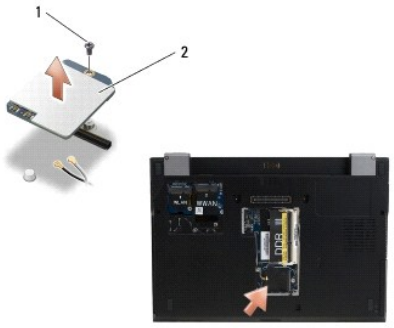
1. Follow the instructions in What You Need to Know For Your Safety.
2. Close the display and turn the computer upside-down.
3. Loosen the captive screws on the memory cover.
4. Remove the memory cover.

5. Remove the M2 x 3-mm screw securing the Latitude ON card to the computer base.
6. Disconnect the two Latitude ON cables.



1	Latitude ON cables	2	Latitude ON card

7. Lift the Latitude On card from the memory bay.



1	M2 x 3-mm screw	2	Latitude ON card

Replacing the Latitude ON Card

NOTICE: Install the Latitude ON card into the compartment shown in the above photograph. Do not install it in any other location.

1. Reseat the Latitude ON card in the memory bay.
2. Reconnect the black and gray Latitude ON cables to their respective connectors, as indicated on the card.
3. Replace the M2 x 3-mm screw to secure the Latitude ON card to the computer base.
4. Replace the memory cover.
5. Follow the instructions in After Working on Your Computer.

Back to Contents Page

Back to Contents Page

LED Dashboard Cover

Dell™ Latitude™ E4300 Service Manual

- Removing the LED Dashboard Cover
- Replacing the LED Dashboard Cover

Removing the LED Dashboard Cover

CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

1. Follow the instructions in What You Need to Know For Your Safety.
2. Open the display as far as it will go.
3. Insert a plastic scribe into the notch on the right side of the LED dashboard cover beside the power button, and carefully pry it up to loosen the LED dashboard cover.

1	scribe tool	2	notch

4. Remove the LED dashboard cover.

Replacing the LED Dashboard Cover

CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

NOTE: This procedure assumes that you have completed the removal procedure first.

1. Slide the left end of the LED dashboard into place, and then gently apply pressure to seat the tabs.
2. Moving to the right, apply pressure along the LED dashboard cover to seat the tabs.
3. Follow the instructions in After Working on Your Computer.

Back to Contents Page

Back to Contents Page

Memory

Dell™ Latitude™ E4300 Service Manual

- Removing a Memory Module
- Replacing a Memory Module
- Verifying Memory Capacity

You can increase your computer memory by installing memory modules on the system board. See "Specifications" in your *Setup and Quick Reference Guide* for information on the memory supported by your computer. Install only memory modules that are intended for your computer.

NOTE: Memory modules purchased from Dell are covered under your computer warranty.

Your computer has two user-accessible SODIMM sockets, referred to as DIMM A and DIMM B, both accessed from the bottom of the computer. The socket closest to the system board, DIMM A, always contains a memory module. The DIMM B socket may contain an additional module for improved system memory performance. If the module in the DIMM A socket must be replaced and DIMM B is installed, you must remove DIMM B first.

Your computer supports the following memory configurations:

Size	Socket	Windows® XP	Windows Vista®
512 MB	DIMM A	X	X
1 GB	DIMM A	X	X
2 GB	DIMM A, or DIMM A and DIMM B	X	X
3 GB	DIMM A and DIMM B	X	X
4 GB	DIMM A, or DIMM A and DIMM B		X
8 GB	DIMM A and DIMM B		X

Removing a Memory Module

CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

NOTICE: If your computer has only one memory module, install the memory module in the socket labeled "DIMM A."

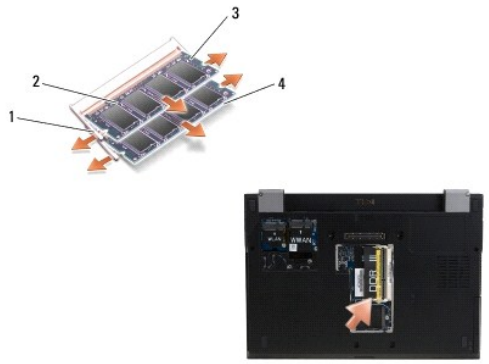
NOTICE: If you remove your original memory modules from the computer during a memory upgrade, keep them separate from any new modules that you may have, even if you purchased the new modules from Dell. If possible, do not pair an original memory module with a new memory module. Otherwise, your computer may not perform optimally.

1. Follow the instructions in What You Need to Know For Your Safety.
2. Close the display and turn the computer upside-down.
3. Loosen the captive screws on the memory cover.
4. Remove the memory cover.

NOTICE: To prevent damage to the memory module connector, do not use tools to remove or replace the memory module.

NOTE: From the underside of the computer, the DIMM B socket is uppermost and DIMM A is closest to the system board.

5. Use your fingertips to carefully spread apart the retaining clips on each end of the memory module connector until the module pops up.



1	memory module retaining clips (2)	2	memory module
3	DIMM B module	4	DIMM A module

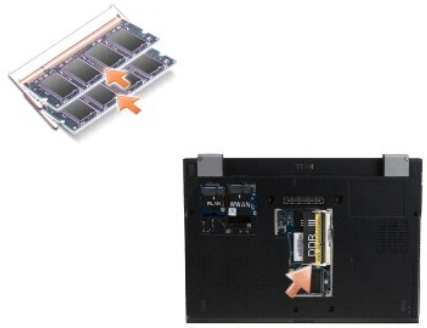
6. Remove the module by grasping it at the side edges and pulling it away from the connector. Place the module into anti-static packaging such as an anti-static bag.

Replacing a Memory Module

CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

NOTE: From the underside of the computer, the DIMM B socket is uppermost and DIMM A is closest to the system board.

1. Ground yourself by touching a metal part in the computer chassis.
2. Remove the memory module from its anti-static packaging.
3. Grasping the module at the side edges, align the slot in the module edge connector with the key in the socket connector.
4. Slide the memory module into the socket connector at a 30-degree angle until it is fully seated.



5. Push the long edge of the memory module down until the retaining clips lock the module into place.

NOTE: If the memory module is not installed properly, the computer may not boot properly. No error message indicates this failure.

6. Replace the memory cover and tighten the captive screws.

NOTICE: If the cover is difficult to close, remove the memory module and reinstall it. Forcing the cover to close may damage your computer.

7. Follow the instructions in After Working on Your Computer.

Verifying Memory Capacity

1. Set the computer upright and open the display.
2. Turn on the computer. As the computer boots, it detects the additional memory and automatically updates the system configuration information. Verify that the memory capacity shown on the display is what is expected.

To confirm the amount of memory installed in the computer:

- *In the Microsoft® Windows Vista® operating system*, click **Start** → **Help and Support**→ **Computer Information**.
- In the *Microsoft® Windows® XP* operating system, right-click the **My Computer** icon on your desktop, and then select **Properties**→ **General**.

Back to Contents Page

Back to Contents Page

Optical Drive

Dell™ Latitude™ E4300 Service Manual

- Removing the Optical Drive
- Replacing the Optical Drive

Removing the Optical Drive

CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

1. Follow the instructions in What You Need to Know For Your Safety.
2. Close the display and turn the computer upside-down.
3. Remove the memory cover.
4. Remove the M2.5 x 5-mm screw securing the optical drive to the system board. The screw is located in the center of the lower-left edge of the memory module compartment.
5. Using a scribe, push on the tab that held the screw to slide the optical drive from its slot on the side of the computer.

1	optical drive	2	bottom of computer
3	scribe tool		M2.5 x 5-mm screw

Replacing the Optical Drive

CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

NOTE: This procedure assumes that you have completed the removal procedure first.

1. Slide the optical drive all the way into its slot on the side of the computer.
2. Turn the computer upside-down.
3. Replace the M2.5 x 5-mm screw to secure the optical drive to the system board.
4. Replace the memory cover.

Back to Contents Page

Back to Contents Page

Palm Rest

Dell™ Latitude™ E4300 Service Manual

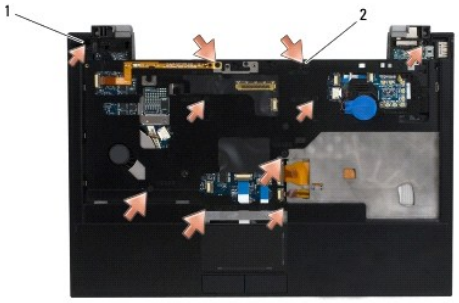
- Removing the Palm Rest
- Replacing the Palm Rest

Removing the Palm Rest

CAUTION: Before you begin the following procedure, follow the safety instructions that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

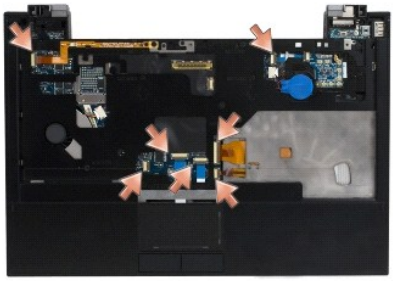
1. Follow the instructions in What You Need to Know For Your Safety.
2. Remove the LED dashboard cover (see Removing the LED Dashboard Cover).
3. Remove the keyboard (see Removing the Keyboard).
4. Remove the display assembly (see Removing the Display Assembly).
5. Turn the computer upside-down and remove the two M2 x 3-mm screws and two M2.5 x 8 screws from the bottom of the computer.

6. Turn the computer rightside-up and remove the five M2.5 x 5-mm screws and five M2.5 x 8-mm screws from the top of the palm rest.

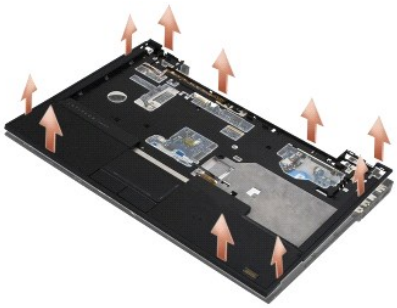


1	M2.5 x 5-mm screws (5; small arrows)	2	M2.5 x 8-mm screws (5; large arrows)

7. Disconnect the seven cables connecting the palm rest to the system board, as shown in the illustration below.



8. Starting at the back center of the palm rest, use your fingers to separate the palm rest from the computer base by gently lifting up the palm rest while pressing down on the back of the computer base.



Replacing the Palm Rest

CAUTION: Before you begin the following procedure, follow the safety instructions that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

NOTICE: Ensure that the touch pad cable and the speaker cable are properly routed before snapping the palm rest into place.

NOTE: This procedure assumes that you have completed the removal procedure first.

1. Carefully reconnect the seven cables connecting the palm rest to the system board.
2. Align the palm rest with the computer base and gently snap it into place.
3. Replace the five M2.5 x 5-mm screws and five M2.5 x 8-mm screws to the top of the palm rest.
4. Replace the two M2 x 3-mm screws and two M2.5 x 8 screws to the bottom of the computer.
5. Replace the display assembly (see Replacing the Display Assembly).
6. Replace the keyboard (see Replacing the Keyboard).
7. Replace the LED dashboard cover (see Replacing the LED Dashboard Cover).
8. Follow the instructions in After Working on Your Computer.

Back to Contents Page

Back to Contents Page

Radio Switch Board

Dell™ Latitude™ E4300 Service Manual

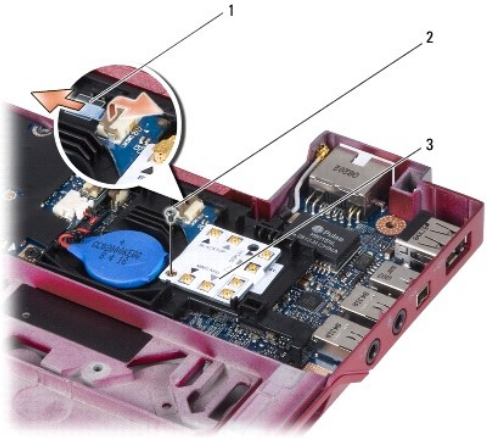
- Removing the Radio Switch Board
- Replacing the Radio Switch Board

CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

Removing the Radio Switch Board

NOTE: The system with Blacktop configuration does not contain a radio switch board or support Latitude ON. In this configuration, the system antenna cables coming from the LCD assembly are longer, and route directly through the system board and to the WLAN card.

1. Follow the instructions in What You Need to Know For Your Safety.
2. Remove the LED dashboard cover (see Removing the LED Dashboard Cover).
3. Remove the keyboard (see Removing the Keyboard).
4. Remove the display assembly (see Removing the Display Assembly).
5. Remove the palm rest (see Removing the Palm Rest).
6. Disconnect cables to WLAN, WWAN, and/or Latitude On™cards (as installed on your computer) from the radio switch board.
7. Disconnect the radio switch board cable.
8. Remove the M2 x 3-mm screw securing the radio switch board to the plastic cage on the system board.
9. Lift the radio switch board away from the computer.

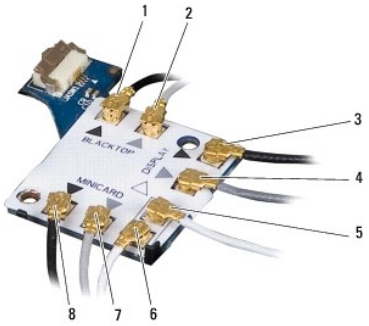


1	radio switch board cable	2	M2 x 3-mm screw
3	radio switch board		

Replacing the Radio Switch Board

NOTE: This procedure assumes that you have completed the removal procedure first.

1. Reseat the radio switch board into the plastic cage on the system board.
2. Replace the M2 x 3-mm screw securing the radio switch board to the plastic cage on the system board.
3. Reconnect the radio switchboard cable.
4. Reconnect cables from WLAN, WWAN, and/or Latitude ON™ card (if installed in your computer) to the radio switch board.



1	black cable (from Latitude ON card)	2	grey cable (from Latitude ON card)
3	black WLAN antenna (from LCD)	4	grey WLAN antenna (from LCD)
5	white WLAN antenna (from LCD)	6	white relay cable (to WLAN card)
7	grey relay cable (to WLAN card)	8	black relay cable (to WLAN card)

5. Replace the palm rest (see Replacing the Palm Rest).
6. Replace the display assembly (see Replacing the Display Assembly).
7. Replace the keyboard (see Replacing the Keyboard).
8. Replace the LED dashboard cover (see Replacing the LED Dashboard Cover).
9. Follow the instructions in After Working on Your Computer.

Back to Contents Page

Back to Contents Page

Speaker Assembly and Hal Sensor Board

Dell™ Latitude™ E4300 Service Manual

- Removing the Speaker Assembly
- Replacing the Speaker Assembly
- Removing the Hal Sensor Board
- Replacing the Hal Sensor Board

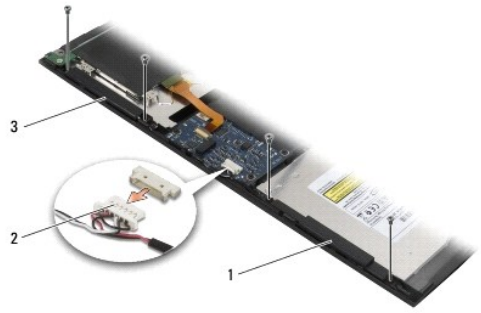
Removing the Speaker Assembly

CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

1. Follow the instructions in What You Need to Know For Your Safety.
2. Remove the LED dashboard cover (see Removing the LED Dashboard Cover).
3. Remove the keyboard (see Removing the Keyboard).
4. Remove the display assembly (see Removing the Display Assembly).
5. Remove the palm rest (see Removing the Palm Rest).

NOTICE: Handle the speakers with care to avoid damaging them.

6. Disconnect the speaker cable connector from the system board.
7. Remove the two M2.5 x 4-mm screws from the right speaker and the two M2.5 x 2.3-mm screws from the left speaker.
8. Remove the speaker assembly.



1	right speaker	2	speaker assembly cable connector
3	left speaker		

9. Disconnect the hal sensor board from the speaker cable assembly (see Removing the Hal Sensor Board).

Replacing the Speaker Assembly

NOTE: This procedure assumes that you have completed the removal procedure first.

NOTE: The left and right speakers are marker "L" and "R," respectively.

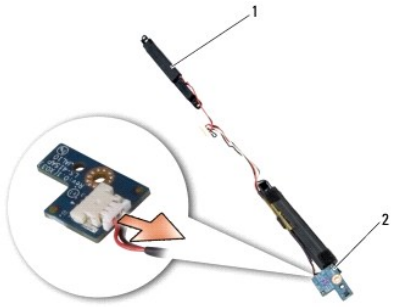
1. Reconnect replacement hal sensor board to the Speaker cable assembly (see Replacing the Hal Sensor Board).

2. Align the speakers over their respective screw holes in the computer base.
3. Reconnect the speaker cable to the system board.
4. Replace the two M2.5 x 4-mm screws on the right speaker and the two M2.5 x 2.3-mm screws on the left speaker.
5. Replace the palm rest (see Replacing the Palm Rest).
6. Replace the display assembly (see Replacing the Display Assembly).
7. Replace the display bezel (see Replacing the Display Bezel).
8. Replace the keyboard (see Replacing the Keyboard).
9. Replace the LED dashboard cover (see Removing the LED Dashboard Cover).

Removing the Hal Sensor Board

NOTE: The Hal sensor is located at the end of the Speaker cable assembly and it detects LCD lid closure positioning.

1. Follow the instructions in What You Need to Know For Your Safety.
2. Remove the LED dashboard cover (see Removing the LED Dashboard Cover).
3. Remove the keyboard (see Removing the Keyboard).
4. Remove the display assembly (see Removing the Display Assembly).
5. Remove the palm rest (see Removing the Palm Rest).
6. Disconnect the speaker cable connector from the system board.
7. Remove the two M2.5 x 4-mm screws from the right speaker and the two M2.5 x 2.3-mm screws from the left speaker.
8. Remove the speaker assembly.
9. Disconnect the hal sensor board from the speaker cable assembly.



1	speaker assembly	2	hal sensor board

Replacing the Hal Sensor Board

1. Reconnect replacement hal sensor board to the speaker cable assembly.
2. Align the speakers over their respective screw holes in the computer base.
3. Replace the two M2.5 x 4-mm screws on the right speaker and the two M2.5 x 2.3-mm screws on the left speaker.

4. Reconnect the speaker cable to the system board.
5. Replace the palm rest (see Replacing the Palm Rest).
6. Replace the display assembly (see Replacing the Display Assembly).
7. Replace the display bezel (see Replacing the Display Bezel).
8. Replace the keyboard (see Replacing the Keyboard).
9. Replace the LED dashboard cover (see Removing the LED Dashboard Cover).

Back to Contents Page

Back to Contents Page

Specifications

Dell™ Latitude™ E4300 Service Manual

NOTE: Offerings may vary by region. For more information regarding the configuration of your computer, click **Start**→ **Help and Support** and select the option to view information about your computer.

Processor	
Processor type	Intel® Core™2 Duo
L1 cache	32 KB per instruction, 32-KB data cache per core
L2 cache	6 MB
Front-side bus frequency	up to 1067 MHz

System Information	
Chipset	Intel GS45 chipset
Data bus width	64 bit
DRAM bus width	64 bit
Processor-address bus width	36 bit
Flash EPROM	SPI 32 Mbit

ExpressCard (Optional)	
NOTE: The ExpressCard slot is designed only for ExpressCards. It does NOT support PC Cards.	
ExpressCard connector	ExpressCard slot (USB and PCI Express-based interfaces)
Cards supported	34 mm ExpressCards

Smart Card	
Read/write capabilities	reads and writes to all ISO 7816 1/2/3/4 microprocessor cards (T=0, T=1)
Cards supported	3 V and 5 V
Program technology supported	Java cards
Interface speed	9600–115, 200 bps
EMV level	level 1 certified
WHQL certification	PC/SC
Compatibility	compatible within a PKI environment
Insert/eject cycles	certified for up to 100,000 cycles

Secure Digital (SD) Memory Card Reader	
Cards supported	SD, SDIO, SD HC, Mini SD MMC, MMC+, Mini MMC

Memory	
Memory module connector	two DDR3 SODIMM sockets
Memory module capacities	512 MB (one SODIMM) 1 GB (one SODIMM) 2 GB (one SODIMM or two SODIMMs) 4 GB (one SODIMM or two SODIMMs, 64-bit

	Microsoft® Windows Vista® operating system only) 8 GB (two SODIMMS, 64-bit Windows Vista only)
Memory type	DDR3 1066 MHz SODIMM (if supported by chipset and/or processor combinations)
Minimum memory	1 GB
Maximum memory	8 GB (requires 64-bit Windows Vista)

NOTE: In order to take advantage of the dual-channel bandwidth capability, both memory sockets must be populated and must match in size.

NOTE: The available memory displayed does not reflect the complete maximum memory installed because some memory is reserved for system files.

NOTE: To enable Intel® Active Management Technology (iAMT®), you must have a DIMM in the memory connector labeled A. For more information, see your *Service Manual* at **support.dell.com / manuals**.

Ports and Connectors	
Audio	microphone connector and stereo headphone/speakers connector
IEEE 1394	4-pin connector
Mini-Card support (internal expansion slots)	one dedicated half Mini-Card slot for WLAN one dedicated full Mini-Card slot for WWAN (Mobile Broadband)
Network adapter	RJ-45 network connector
Smart card reader	integrated smart-card reader
USB, eSATA	two USB-2.0 compliant connectors (one with eSATA)
Video	VGA video connector
E-family docking (optional)	144-pin docking connector

Communications	
Network adapter	10/100/1000 Ethernet LAN on system board
Wireless	WLAN half Mini-Card, WWAN full Mini-Card Bluetooth® wireless technology
Mobile Broadband	full Mini-Card
GPS	supported by Mobile Broadband full Mini-Card

Video	
Video type	integrated on system board, hardware accelerated
Data bus	integrated video
Video controller	Intel Extreme
Video memory	up to 64 MB (shared, at system memory of less than 512 MB) up to 256 MB (shared, at system memory of more than 512 MB)
Video output	video connector

Audio	
Audio type	two-channel high definition audio
Audio controller	IDT 92HD71B
Stereo conversion	24-bit (analog-to-digital and digital-to-analog)
Interfaces:	
Internal	high-definition audio codec
External	microphone-in connector and stereo headphones/speakers connector

Speakers	two 1-watt, 4-ohm speakers
Internal speaker amplifier	1 watt per channel, 4 ohms
Internal microphone	single digital microphone
Volume controls	volume control buttons

Display	
Type (active-matrix TFT)	WXGA
Dimensions:	
Height	178.8 mm (7.039 inches)
Width	289.7 mm (11.41 inches)
Diagonal	337.8 mm (13.3 inches)
Maximum resolution	1280 x 800 at 262 K colors
Refresh rate	60 Hz
Operating angle	0º (closed) to 160° (except when docked)
Viewing angles:	
Horizontal	40/40°
Vertical	15/30°
Pixel pitch	0.2235 mm (0.008799 inch)
Typical power consumption (panel with backlight)	4.3 W (maximum)

Keyboard	
Number of keys	83 (U.S. and Canada); 84 (Europe); 87 (Japan)
Layout	QWERTY/AZERTY/Kanji
Size	full sized (19.05-mm key pitch)

Touch Pad	
X/Y position resolution	240 cpi
Size:	
Width	68 mm (2.677 inch) sensor-active area
Height	37.63 mm (1.481 inch) rectangle

Battery	
Types	3-cell (2.6 Ahr) 28 Whr/11.1 VDC 3-cell (2.8 Ahr) 30 Whr/11.1 VDC 6-cell (2.6 Ahr) 56 Whr/11.1 VDC 6-cell (2.8 Ahr) 60 Whr/11.1 VDC 6-cell (2.15 Ahr) 48 Whr/11.1 VDC battery slice
Depth	28.81 mm (1.13 inches) (3 cell) 51.13 mm (2.01 inches) (6 cell) 200.3 mm (7.89 inches) (battery slice)
Height	21.85 mm (0.86 inch) (3 cell and 6 cell) 9.01 mm (0.35 inch) to approximately 10.52 mm (approximately 0.41 inch) (battery slice)
Width	207.6 mm (8.17 inches) (3 cell and 6 cell) 298.3 mm (11.74 inches) (battery slice)
Weight	0.18 kg (0.4 lb) (3 cell) 0.33 kg (0.73 lb) (6 cell) 0.71 kg (1.56 lb) (battery slice)
Voltage	11.1 VDC (3 cell, 6 cell, and battery slice)
Charge time (approximate):	
Computer off	approximately 3 hours and 20 minutes to 100%

	capacity approximately 2.5 to 4 hours with the battery slice
Operating time	**NOTE:** Battery operating time varies depending on operating conditions and can be significantly reduced under certain power-intensive conditions.
Life span (approximate)	1 year
Temperature range:	
Operating	0° to 40°C (32° to 104°F)
Storage	–10° to 65°C (14° to 149°F)
Coin-cell battery	CR-2032

AC Adapter	
Input voltage	100–240 VAC
Input current (maximum)	1.50 A
Input frequency	50–60 Hz
Temperature range:	
Operating	0° to 35°C (32° to 95°F)
Storage	–40° to 65°C (–40° to 149°F)
PA-12 65 W Travel AC adapter:	
Output voltage	19.5 V DC
Output current	3.34 A
Height	15 mm (0.6 inches)
Width	66 mm (2.6 inches)
Depth	127 mm (5.0 inches)
Weight	0.29 kg (0.64 lb)
PA-3E 90 E-Series AC adapter:	
Output voltage	19.5 V DC
Output current	4.62 A
Height	15 mm (0.6 inches)
Width	70 mm (2.8 inches)
Length	147 mm (5.8 inches)
Weight	0.345 kg (0.76 lb)

Fingerprint Reader (Optional)	
Type	RF Swipe

Physical	
Height	25.41–29.51 mm (1.00–1.16 inches)
Width	310 mm (12.20 inches)
Depth	217 mm (8.54 inches)
Weight	1.5 kg (3.30 lb) (with 3-cell battery, airbay, and an SSD drive) 1.6 kg (3.52 lb) (with 3-cell battery, DVDRW drive, and an SSD drive)

Environmental	
Temperature range:	
Operating	0° to 35°C (32° to 95°F)
Storage	–40° to 65°C (–40° to 149°F)
Relative humidity (maximum):	
Operating	10% to 90% (noncondensing)
Storage	5% to 95% (noncondensing)
Maximum vibration (using a random vibration spectrum that simulates user environment):	
Operating	0.66 GRMS

Storage	1.3 GRMS
Maximum shock (measured with hard drive in operating status and a 2-ms half-sine pulse for operating specification; also measured with hard drive in head-parked position and a 2-ms halfsine pulse for storage specification):	
Operating	143 G
Storage	163 G
Altitude (maximum):	
Operating	−15.2 to 3048 m (−50 to 10,000 ft)
Storage	−15.2 to 3048 m (−50 to 10,000 ft)

Back to Contents Page

Back to Contents Page

System Board

Dell™ Latitude™ E4300 Service Manual

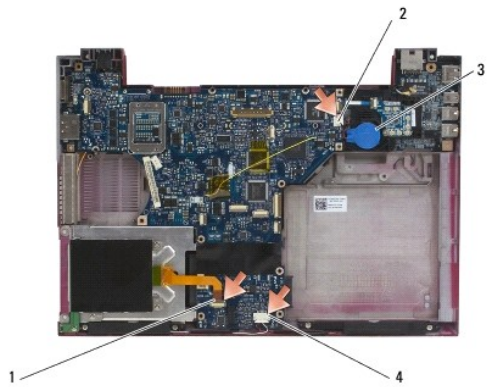
- Removing the System Board Assembly
- Removing the Right I/O Card
- Replacing the Right I/O Card
- Removing the Left I/O Card
- Replacing the Left I/O Card
- Replacing the System Board Assembly

The system board's BIOS chip contains the Service Tag number, which is also visible on a barcode label on the bottom of the computer. The replacement kit for the system board includes media that provides a utility for transferring the Service Tag to the replacement system board.

Removing the System Board Assembly

CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

1. Follow the instructions in What You Need to Know For Your Safety.
2. Remove the hard drive (see Replacing the Hard Drive).
3. Remove the LED dashboard cover (see Removing the LED Dashboard Cover).
4. Remove the keyboard (see Removing the Keyboard).
5. Remove the display assembly (see Removing the Display Assembly).
6. Remove the palm rest (see Removing the Palm Rest).
7. Remove the system fan (see Removing the System Fan).
8. Remove the optical drive (see Removing the Optical Drive).
9. Disconnect the smart card cable.
10. Disconnect the speaker assembly cable.
11. Disconnect the coin-cell battery from the system board (see Removing the Coin-Cell Battery).



1	smart card cable	2	coin-cell battery
3	coin-cell battery connector	4	speaker assembly cable

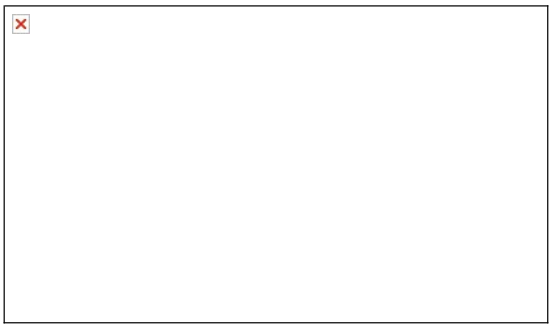
12. Remove the four M2.5 x 5 screws and three M2 x 4-mm screws from the system board.

13. Remove the SD (Secure Digital) card (or blank) from the SD card slot at the front edge of the computer.

14. Remove the system board assembly:

    a. With the front of the computer facing you, grasp the upper-right corner of the system board assembly and lift it slightly; slowly ease the connectors out of their access holes on the back and side of the computer base.

    b. Pull the system board assembly away from you toward the back of the computer to remove the system board assembly.



Removing the Right I/O Card

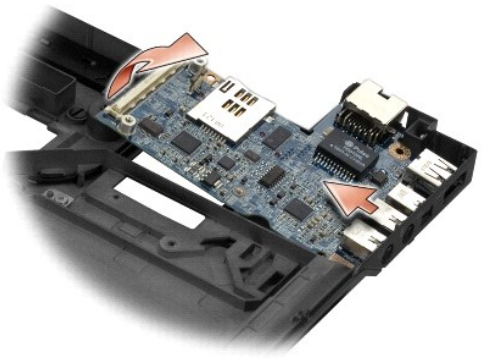
CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

The right I/O card provides USB, audio, and IEEE 1394 connectors for the computer.

NOTE: This procedure assumes that you have completed the system board removal procedure first.

1. Remove the radio switch board (see Removing the Radio Switch Board).

2. Use a scribe under the left side of the I/O card to lift the card from the computer.



Replacing the Right I/O Card

NOTE: This procedure assumes that you have completed the right I/O card removal procedure first.

1. Reseat the right I/O card, aligning the connectors with their respective ports on the right side of the computer base.

2. Replace the radio switch board (see Replacing the Radio Switch Board).

Removing the Left I/O Card

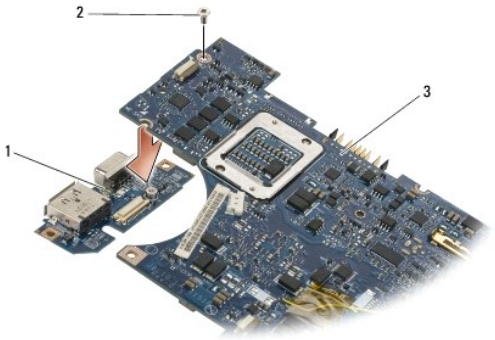
CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

NOTICE: If you are replacing the system board assembly, retain the DC-in power assembly. The DC-in power assembly is not included with the replacement system board assembly.

The left I/O card provides DC-in, video, and USB connectors.

NOTE: This procedure assumes that you have completed the system board removal procedure first.

1. Remove the DC power-cable assembly (see Removing the DC-In Power Assembly).
2. Remove the M2.5 x 5-mm screw that secures the left I/O card to the computer base.
3. Remove the left I/O card from the computer.



1	left I/O card	2	M2.5 x 5-mm screw
3	system board		

Replacing the Left I/O Card

NOTE: This procedure assumes that you have completed the left I/O card removal procedure first.

1. Reseat the I/O card, aligning the connectors with their respective ports on the left side of the computer base.
2. Replace the M2.5 x 5-mm screw to secure the left I/O card to the computer base.
3. Replace the DC power-cable assembly (see Replacing the DC-in Power Assembly).

Replacing the System Board Assembly

CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

NOTE: This procedure assumes that you have completed the removal procedure first.

NOTE: If you are installing a new system board, the system board kit may or may not include a separate BIOS chip. If the kit includes a separate BIOS chip, you must install it on the system board before you boot the system.

1. Insert the right side of the system board into the computer base at an angle until the connectors on the system board are aligned with the holes on the computer base, and then carefully lower the system board into place.
2. Replace the four M2.5 x 5 screws and three M2 x 4-mm screws on the system board.
3. Reconnect the coin-cell battery connector from the bottom side of the computer.
4. Replace the palm rest (see Replacing the Palm Rest)
5. Replace the optical drive (see Replacing the Optical Drive).

6. Replace the system fan (see Replacing the System Fan).
7. Replace the display assembly (see Replacing the Display Assembly).
8. Replace the keyboard (see Replacing the Keyboard).
9. Remove the LED dashboard cover (see Removing the LED Dashboard Cover).
10. Replace the hard drive (see Replacing the Hard Drive).

NOTICE: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

11. Follow the instructions in After Working on Your Computer.

NOTE: If you use a BIOS update program media to flash the BIOS, press <F12> before inserting the media in order to set the computer to boot from the media for one time only. Otherwise, you must enter the system setup program to change the default boot order.

12. Flash the BIOS (see Flashing the BIOS).
13. Enter the system setup program to update the BIOS on the new system board with the computer Service Tag. For information on the system setup program, see the *Dell Technology Guide* on your computer or at **support.dell.com**.

Back to Contents Page

Back to Contents Page

Dell™ Latitude™ E4300 Service Manual

NOTE: A NOTE indicates important information that helps you make better use of your computer.

NOTICE: A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

CAUTION: A CAUTION indicates a potential for property damage, personal injury, or death.

If you purchased a Dell™ n Series computer, any references in this document to Microsoft® Windows® operating systems are not applicable.

Macrovision Product Notice

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation.

Information in this document is subject to change without notice.
© 2008 Dell Inc. All rights reserved.

Reproduction of this material in any manner whatsoever without the written permission of Dell Inc. is strictly forbidden.

Trademarks used in this text: *Dell*, the *DELL* logo, *Latitude*, and *Latitude On* are trademarks of Dell Inc.; *Bluetooth* is a registered trademark owned by Bluetooth SIG, Inc., and is used by Dell under license; *Microsoft*, *Windows*, *Windows Vista*, *Outlook*, and the *Windows Vista* start button logo are either trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries.

Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Dell Inc. disclaims any proprietary interest in trademarks and trade names other than its own.

July 2008 Rev. A00

Model PP13S

Back to Contents Page

Back to Contents Page

Troubleshooting

Dell™ Latitude™ E4300 Service Manual

- Tools
- Dell Diagnostics
- Solving Problems
- Dell Technical Update Service
- Dell Support Utility

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at www.dell.com/regulatory_compliance.

CAUTION: Always unplug your computer from the electrical outlet before opening the cover.

Tools

Power Lights

The power button light located on the front of the computer illuminates and blinks or remains solid to indicate different states:

- If the power light is green and the computer is not responding, see Diagnostic Lights.
- If the power light is blinking green, the computer is in standby mode. Press a key on the keyboard, move the mouse, or press the power button to resume normal operation.
- If the power light is off, the computer is either turned off or is not receiving power.
  - Reseat the power cable into both the power connector on the back of the computer and the electrical outlet.
  - If the computer is plugged into a power strip, ensure that the power strip is plugged into an electrical outlet and that the power strip is turned on.
  - Bypass power protection devices, power strips, and power extension cables to verify that the computer turns on properly.
  - Ensure that the electrical outlet is working by testing it with another device, such as a lamp.
  - Ensure that the main power cable and front panel cable are securely connected to the system board (see System Board).
- If the power light is blinking amber, the computer is receiving electrical power, but an internal power problem may exist.
  - Ensure that the voltage selection switch is set to match the AC power at your location, if applicable.
  - Ensure that the processor power cable is securely connected to the system board (see System Board).
- If the power light is steady amber, a device may be malfunctioning or incorrectly installed.
  - Remove and then reinstall the memory modules (see Memory).
  - Remove and then reinstall any smart cards.
- Eliminate interference. Some possible causes of interference are:
  - Power, keyboard, and mouse extension cables
  - Too many devices on a power strip
  - Multiple power strips connected to the same electrical outlet

Diagnostic Lights

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at www.dell.com/regulatory_compliance.

Your computer has three keyboard status lights located above the keyboard. During normal operation, the keyboard status lights display the current status (*on* or *off*) of the Num Lock, Caps Lock, and Scroll Lock features. If the computer starts without error, the lights flash, and then turn off. If the computer malfunctions, however, you can use the status of the lights to help identify the problem.

NOTE: After the computer completes POST, the Num Lock light may remain on, depending on your BIOS settings. For more information on using the system setup program, see the *Dell™ Technology Guide* on your computer or at **support.dell.com**.

Diagnostic Light Codes During POST

To troubleshoot a problem with your computer, read the sequence of the keyboard status lights in order from left to right (Num Lock, Caps Lock, and then

Scroll Lock). If the computer malfunctions the individual lights display a status of either *On* , *Off* , or *Flashing* .

Light Pattern	Problem Description	Suggested Resolution
	No memory modules are detected.	• If two or more memory modules are installed, remove the modules (see Removing a Memory Module), then reinstall one module (see Replacing a Memory Module) and restart the computer. If the computer starts normally, continue to install additional memory modules (one at a time) until you have identified a faulty module or reinstalled all modules without error. • If available, install working memory of the same type into your computer (see Memory). • If the problem persists, contact Dell (see Contacting Dell).
	Memory modules are detected, but a memory failure has occurred.	• If two or more memory modules are installed, remove the modules (see Removing a Memory Module), then reinstall one module (see Replacing a Memory Module) and restart the computer. If the computer starts normally, continue to install additional memory modules (one at a time) until you have identified a faulty module or reinstalled all modules without error. • If available, install working memory of the same type into your computer (see Memory). • If the problem persists, contact Dell (see Contacting Dell).
	System board failure has occurred.	Contact Dell (see Contacting Dell).
	A possible processor failure has occurred.	• The processor is attached to the system board. Reseat the system board (see System Board). • If the problem persists, contact Dell (see Contacting Dell).
	A possible LCD failure has occurred.	• Reseat the LCD cable (see Display Assembly). • If the problem persists, contact Dell (see Contacting Dell).
	A possible keyboard failure has occurred.	• Reseat the keyboard (see Keyboard). • If available, connect an external keyboard. • If the problem persists, contact Dell (see Contacting Dell).

System Messages

NOTE: If the message you received is not listed in the table, see the documentation for either the operating system or the program that was running when the message appeared.

Decreasing available memory — See Lockups and Software Problems.

Error 8602 — Auxiliary device failure verify that mouse and keyboard are securely attached to correct connectors.

Flash part write protected error — Contact Dell (see Contacting Dell).

Gate A20 failure — See Lockups and Software Problems.

Invalid configuration information - please run setup program — Enter the system setup program and change system setup options to correct the configuration error. For more information on using the system setup program, see the *Dell Technology Guide* on your computer or at **support.dell.com**.

Keyboard failure — Keyboard failure or keyboard cable loose (see Keyboard).

Memory address line failure at (address), read value expecting (value) — See Lockups and Software Problems.

Memory double word logic failure at (address), read value expecting (value) — See Lockups and Software Problems.

Memory odd/even logic failure at (address) read value expecting (value) — See Lockups and Software Problems.

Memory write/read failure at (address), read value expecting (value) — See Lockups and Software Problems.

Memory size in cmos invalid — See Lockups and Software Problems.

No boot device available – strike F1 to retry boot, F2 for setup utility. Press F5 to run onboard diagnostics — The system cannot detect a bootable device or partition.

- If the floppy drive is your boot device, ensure that the drive is installed properly and that a bootable floppy disk is in the drive.
- If the hard drive is your boot device, ensure that the drive is installed properly and partitioned as a boot device.
- Enter the system setup program and ensure that the boot sequence information is correct. For information on using the system setup program, see the *Dell Technology Guide* on your computer or at **support.dell.com**.

No boot sector on hard-disk drive — Enter the system setup program and ensure that the configuration information for the hard drive is correct. For information on using the system setup program, see the *Dell Technology Guide* on your computer or at **support.dell.com**.

No timer tick interrupt — Run the Dell Diagnostics (see Dell Diagnostics).

Non-system disk or disk error — Replace the floppy disk with one that has a bootable operating system or remove the floppy disk and restart the computer.

Not a boot diskette — Insert a bootable floppy disk and restart your computer.

Power warning messages have been disabled. Run the setup utility to enable these messages. — For information on using the system setup program, see the *Dell Technology Guide* on your computer or at **support.dell.com**.

Read failure on internal hard drive — See Drive Problems.

Read failure on second internal hard drive — See Drive Problems.

RTC mode fixed – time and date may be wrong — Enter the system setup program and correct the date or time. For information on using the system setup program, see the *Dell Technology Guide* on your computer or at **support.dell.com**. If the problem persists, replace the CMOS battery.

Shutdown failure — Run the Dell Diagnostics (see Dell Diagnostics).

Time-of-day clock stopped – please run the system setup program — Enter the system setup program and correct the date or time. For information on using the system setup program, see the ***Dell Technology Guide*** on your computer or at **support.dell.com**.If the problem persists, replace the CMOS battery.

Time-of-day not set – please run the system setup program — Enter the system setup program and correct the date or time. For information on using the system setup program, see the *Dell Technology Guide* on your computer or at **support.dell.com**. If the problem persists, replace the CMOS battery.

Timer chip counter 2 failed — Run the Dell Diagnostics (see Dell Diagnostics).

The AC power adapter wattage and type cannot be determined. the battery may not charge. they system will adjust the performance to match the power available. please connect a dell xxx-W AC adapter or greater for best system performance. strike the F3 key (before the F1 or F2 key) if you do not want to see power warning messages again. strike the F1 key to continue, F2 to run the setup utility. — Connect the correct AC adapter to the computer or docking station.

The computer is docked and only battery power is detected. This can happen if the power adapter is missing, the power cord is unplugged, or the computer is not properly connected to the docking station. You should undock, redock, attach the power adapter, or plug in the power cord. Strike the F1 key to shutdown.

The amount of system memory has changed. If you did not change your memory... to resolve this issue, try to reseat the memory. Strike the F1 key to continue, F2 to run the setup utility. Press F5 to run onboard diagnostics. —

- Reseat the memory (see Memory).
- If memory was not removed or installed, memory module or system board failure may have occurred. Contact Dell for assistance (see Contacting Dell).

Unsupported memory. Strike the F1 key to shutdown. — Ensure that the memory you are using is supported by your computer (see Memory).

WARNING: A xxx-W AC adapter has been detected, which is less than the recommended xxx-W AC adapter originally shipped. this will increase the time to charge the battery. They system will adjust the performance to match the power available. please connect a dell xxx-W AC adapter or greater for best performance. Strike the F3 key (before the F1 or F2 key) if you do not want to see power warning messages again. Strike the F1 key to continue, F2 to run the setup utility. — Connect the correct AC adapter to the computer or docking station.

WARNING: The primary battery cannot be identified. This system will be unable to charge batteries until this battery is removed. — For computers with two batteries installed, the primary battery may be installed incorrectly, or the battery or system board may be defective.

WARNING: The second battery cannot be identified. This system will be unable to charge batteries until this battery is removed. — For computers with two batteries installed, the secondary battery may be installed incorrectly, or the battery or system board may be defective.

WARNING: The batteries cannot be identified. This system will be unable to charge batteries until this battery is removed. — For computers with two batteries installed, one or more of the batteries may be installed incorrectly, or the batteries or system board may be defective.

WARNING: The battery cannot be identified. This system will be unable to charge this battery. — The battery may be installed incorrectly, or the battery or system board may be defective.

WARNING: The battery attached cannot power the system. The system will not boot with this battery plugged in. Press F1 to shutdown the system.

WARNING! Battery is critically low. hit F1 to continue.

WARNING: The TPM could not be initialized — System board failure may have occurred. Contact Dell for assistance (see Contacting Dell).

Warning messages have been disabled. Run the setup utility to enable these messages. — For information on using the system setup program, see the *Dell Technology Guide* on your computer or at **support.dell.com**.

WARNING: Dell's disk monitoring system has detected that drive [0/1] on the [primary/secondary] eide controller is operating outside of normal specifications. it is advisable to immediately back up your data and replace your hard drive by calling your support desk or dell. — Contact Dell for assistance (see Contacting Dell).

Your power adapter does not supply enough power to run the attached docking station. Either undock or insert an appropriate adapter. Strike the F1 key to shutdown. — Connect the correct AC adapter.

Your system is docked, but the AC adapter type cannot be determined. Either undock or insert an appropriate adapter. Strike the F1 key to shutdown. — The AC adapter may be installed incorrectly, or the AC adapter or docking station may be defective.

Your system automatically power off because it became warmer than expected. this may have been caused by: operating or storing the system in an environment where the ambient temperature is too high, or obstructing the air flow from the system fan vents. If the problem recurs, please call dell support with error code #M1004. — Contact Dell for assistance (see Contacting Dell).

*****Processor SSDT data not found*** operating system power management for mult core processors will be disabled. —**

*****UL circuit tripped*** the UL trip count is shown below the F3-key message. Strike the F3 key to clear the UL counter, any other key to continue. —** Run the Dell Diagnostics (see Dell Diagnostics).

*****Processor microcode update failure*** the revision of processor in the system is not supported. —** Ensure that the processor you are using is supported by your computer. See "Specifications" in the *Setup and Quick Reference Guide*.

Hardware Troubleshooter

If a device is either not detected during the operating system setup or is detected, but incorrectly configured, you can use the Hardware Troubleshooter to resolve the incompatibility.

Windows Vista®:

1. Click the Windows Vista start button , and click **Help and Support.**
2. Type hardware troubleshooter in the search field and press <Enter> to start the search.
3. In the search results, select the option that best describes the problem and follow the remaining troubleshooting steps.

Windows® XP:

1. Click **Start→ Help and Support**.
2. Type hardware troubleshooter in the search field and press <Enter> to start the search.
3. In the **Fix a Problem** section, click **Hardware Troubleshooter**.
4. In the **Hardware Troubleshooter** list, select the option that best describes the problem and click **Next** to follow the remaining troubleshooting steps.

Dell Diagnostics

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at www.dell.com/regulatory_compliance.

When to Use the Dell Diagnostics

If you experience a problem with your computer, perform the checks in Troubleshooting, and then run the Dell Diagnostics before contacting Dell for assistance.

Start the Dell Diagnostics from your hard drive or from the *Drivers and Utilities* media provided with your computer.

NOTE: The *Drivers and Utilities* media is optional and may not ship with your computer.

NOTE: The Dell Diagnostics only operate on Dell computers.

Starting the Dell Diagnostics From Your Hard Drive

Before running the Dell Diagnostics, enter the system setup program to review your computer's configuration information, and ensure that the device you want to test is displayed in the system setup program and is active. For information on using the system setup program, see the *Dell Technology Guide* on your computer or at **support.dell.com**.

The Dell Diagnostics is located on a separate diagnostic utility partition on your hard drive.

NOTE: If the computer is connected to a docking device (docked), undock it. See the documentation that came with your docking device for instructions.

NOTE: If your computer does not display a screen image, contact Dell (see Contacting Dell).

1. Ensure that the computer is connected to an electrical outlet that is known to be working properly.
2. Press and hold the <Fn> key or the mute button then turn on your computer.

   NOTE: Alternatively, you can select **Diagnostics** from the one-time boot menu at startup to boot to the diagnostic utility partition and run the Dell Diagnostics. For information on using the system setup program, see the *Dell Technology Guide* on your computer or at **support.dell.com**.

   The computer runs the Pre-boot System Assessment (PSA), a series of initial tests of your system board, keyboard, display, memory, hard drive, etc.

   - During the assessment, answer any questions that appear.
   - If failures are detected during the Pre-boot System Assessment, write down the error code(s) and see Contacting Dell.
   - If the Pre-boot System Assessment completes successfully, the following message appears: "Booting Dell Diagnostic Utility Partition. Press any key to continue."

   NOTE: If you see a message stating that no diagnostics utility partition has been found, run the Dell Diagnostics from your *Drivers and Utilities* media (see Starting the Dell Diagnostics From the Drivers and Utilities Media).

3. Press any key to start the Dell Diagnostics from the diagnostics utility partition on your hard drive.
4. Press <Tab> to select **Test System** and then press <Enter>.

NOTE: It is recommended that you select **Test System** to run a complete test on your computer. Selecting **Test Memory** initiates the extended memory test, which can take up to thirty minutes or more to complete. When the test completes, record the test results and then press any key to return to the previous menu.

5. At the Dell Diagnostics Main Menu, left-click with the touch pad/mouse, or press <Tab> and then <Enter>, to select the test you want to run (see Dell Diagnostics Main Menu).

NOTE: Write down any error codes and problem descriptions exactly as they appear and follow the instructions on the screen.

6. After all tests have completed, close the test window to return to the Dell Diagnostics Main Menu.
7. Close the Main Menu window to exit the Dell Diagnostics and restart the computer.

Starting the Dell Diagnostics From the Drivers and Utilities Media

Before running the Dell Diagnostics, enter the system setup program to review your computer's configuration information, and ensure that the device you want to test is displayed in the system setup program and is active. For information on using the system setup program, see the *Dell Technology Guide* on your computer or at **support.dell.com**.

1. Insert the *Drivers and Utilities* media into the optical drive.
2. Restart your computer.
3. When the DELL logo appears, press <F12> immediately.

NOTE: Keyboard failure may result when a key is held down for extended periods of time. To avoid possible keyboard failure, press and release <F12> in even intervals to open the Boot Device Menu.

If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft® Windows desktop, then shut down your computer and try again.

4. When the boot device list appears, use the up- or down- arrow keys to highlight **CD/DVD/CD-RW Drive** then press <Enter>.

NOTE: Using the one-time boot menu changes the boot sequence for the current boot only. Upon restart, the computer boots according to the boot sequence specified in the system setup program.

5. Press any key to confirm that you want to start from the CD/DVD.

If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft Windows desktop, then shut down your computer and try again.

6. Type 1 to **Run the 32 Bit Dell Diagnostics**.
7. At the **Dell Diagnostics Menu**, type 1 to select **Dell 32-bit Diagnostics for Resource CD (graphical user interface)**.
8. Press <Tab> to select **Test System** and then press <Enter>.

NOTE: It is recommended that you select **Test System** to run a complete test on your computer. Selecting **Test Memory** initiates the extended memory test, which can take up to thirty minutes or more to complete. When the test completes, record the test results and then press any key to return to the previous menu.

9. At the Dell Diagnostics Main Menu, left-click with the mouse, or press <Tab> and then <Enter>, to select the test you want to run (see Dell Diagnostics Main Menu).

NOTE: Write down any error codes and problem descriptions exactly as they appear and follow the instructions on the screen.

10. After all tests have completed, close the test window to return to the Dell Diagnostics Main Menu.
11. Close the Main Menu window to exit the Dell Diagnostics and restart the computer.
12. Remove the *Drivers and Utilities* media from the optical drive.

Dell Diagnostics Main Menu

After the Dell Diagnostics loads the following menu appears:

Option	Function
Test Memory	Run the stand-alone memory test
Test System	Run system diagnostics
Exit	Exit the diagnostics

Press <Tab> to select the test you want to run and then press <Enter>.

NOTE: It is recommended that you select **Test System** to run a complete test on your computer. Selecting **Test Memory** initiates the extended memory test, which can take up to thirty minutes or more to complete. When the test completes, record the test results and then press any key to return to this menu.

After **Test System** is selected, the following menu appears:

Option	Function
Express Test	Performs a quick test of devices in the system. This typically can take 10 to 20 minutes. **NOTE:** The Express Test requires no interaction on your part. Run Express Test first to increase the possibility of tracing a problem quickly.
Extended Test	Performs a thorough check of devices in the system. This typically can take an hour or more. **NOTE:** The Extended Test periodically requires your input to answer specific questions.
Custom Test	Use to test a specific device or customize the tests to be run.
Symptom Tree	This option allows you to select tests based on a symptom of the problem you are having. This option lists the most common symptoms.

NOTE: It is recommended that you select **Extended Test** to perform a more thorough check of devices in the computer.

For any problem encountered during a test, a message appears with an error code and a description of the problem. Write down the error code and problem description exactly as it appears and follow the instructions on the screen. If you cannot resolve the problem, contact Dell (see "Contacting Dell" on page 112).

NOTE: When contacting Dell support, have your Service Tag ready. The Service Tag for your computer is located at the top of each test screen.

The following tabs provide additional information for tests run from the Custom Test or Symptom Tree option:

Tab	Function
Results	Displays the results of the test and any error conditions encountered.
Errors	Displays error conditions encountered, error codes, and the problem description.
Help	Describes the test and any requirements for running the test.
Configuration	Displays the hardware configuration for the selected device. The Dell Diagnostics obtains configuration information for all devices from the system setup program, memory, and various internal tests, and displays the information in the device list in the left pane of the screen. **NOTE:** The device list may not display the names of all components installed on your computer or all devices attached to your computer.
Parameters	Allows you to customize the test, if applicable, by changing the test settings.

Solving Problems

Follow these tips when troubleshooting your computer:

- If you added or removed a part before the problem started, review the installation procedures and ensure that the part is correctly installed.
- If a peripheral device does not work, ensure that the device is properly connected.
- If an error message appears on the screen, write down the exact message. This message may help support personnel diagnose and fix the problem(s).
- If an error message occurs in a program, see the program's documentation.

NOTE: The procedures in this document were written for the Windows default view, so they may not apply if you set your Dell computer to the Windows Classic view.

Battery Problems

CAUTION: There is a danger of a new battery exploding if it is incorrectly installed. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at www.dell.com/regulatory_compliance.

Drive Problems

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at www.dell.com/regulatory_compliance.

Ensure that Microsoft Windows Recognizes the drive —

Windows Vista:

- Click the Windows Vista Start button and click **Computer**.

Windows XP:

- Click **Start and click My Computer**.

If the drive is not listed, perform a full scan with your antivirus software to check for and remove viruses. Viruses can sometimes prevent Windows from recognizing the drive.

Test the drive —

- Insert another disc to eliminate the possibility that the original drive is defective.
- Insert a bootable floppy disk and restart the computer.

Clean the drive or disk

Check the cable connections

Run the Hardware Troubleshooter — See Hardware Troubleshooter.

Run the Dell Diagnostics — See Dell Diagnostics.

Optical drive problems

NOTE: High-speed optical drive vibration is normal and may cause noise, which does not indicate a defect in the drive or the media.

NOTE: Because of different regions worldwide and different disc formats, not all DVD titles work in all DVD drives.

Adjust the Windows volume control —

- Click the speaker icon in the lower-right corner of your screen.
- Ensure that the volume is turned up by clicking the slidebar and dragging it up.
- Ensure that the sound is not muted by clicking any boxes that are checked.

Check the speakers and subwoofer — See Sound and Speaker Problems.

Problems writing to an optical drive

Close other programs — The optical drive must receive a steady stream of data during the writing process. If the stream is interrupted, an error occurs. Try closing all programs before you write to the optical.

Turn off standby mode in Windows before writing to a disc — Search for the keyword *standby* in Windows Help and Support for information on power management modes.

Hard drive problems

Run Check Disk —

Windows Vista:

1. Click **Start** and click **Computer**.
2. Right-click **Local Disk C:**.
3. Click **Properties**→ **Tools**→ **Check Now**.

   The **User Account Control** window may appear. If you are an administrator on the computer, click **Continue**; otherwise, contact your administrator to continue the desired action.

4. Follow the instructions on the screen.

Windows XP:

1. Click **Start and click My Computer**.
2. Right-click **Local Disk C:**.
3. Click **Properties**→ **Tools**→ **Check Now**.
4. Click **Scan for and attempt recovery of bad sectors and click Start**.

E-Mail and Internet Problems

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at www.dell.com/regulatory_compliance.

Check the Microsoft Outlook® Express security settings — If you cannot open your e-mail attachments:

1. In Outlook Express, click **Tools**→ **Options**→ **Security**.
2. Click **Do not allow attachments** to remove the checkmark, as needed.

Ensure that you are connected to the Internet — Ensure that you have subscribed to an Internet provider. With the Outlook Express e-mail program open, click **File**. If **Work Offline** has a checkmark next to it, click the checkmark to remove it and connect to the Internet. For help, contact your Internet service provider.

Error Messages

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at www.dell.com/regulatory_compliance.

If the error message is not listed, see the documentation for the operating system or the program that was running when the message appeared.

A filename cannot contain any of the following characters: \ / : * ? " < > | — Do not use these characters in filenames.

A required .DLL file was not found — The program that you are trying to open is missing an essential file. To remove and then reinstall the program:

Windows Vista:

1. Click **Start** → **Control Panel**→ **Programs**→ **Programs and Features**.
2. Select the program you want to remove.
3. Click **Uninstall**.
4. See the program documentation for installation instructions.

Windows XP:

1. Click **Start**→ **Control Panel**→ **Add or Remove Programs**→ **Programs and Features**.
2. Select the program you want to remove.
3. Click **Uninstall**.
4. See the program documentation for installation instructions.

drive letter **:\ is not accessible. The device is not ready —** The drive cannot read the disk. Insert a disk into the drive and try again.

Insert bootable media — Insert a bootable floppy disk, CD, or DVD.

Non-system disk error — Remove the floppy disk from the floppy drive and restart your computer.

Not enough memory or resources. Close some programs and try again — Close all windows and open the program that you want to use. In some cases, you may have to restart your computer to restore computer resources. If so, run the program that you want to use first.

Operating system not found — Contact Dell (see Contacting Dell).

IEEE 1394 Device Problems

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at www.dell.com/regulatory_compliance.

NOTE: Your computer supports only IEEE 1394a standard.

Ensure that the cable for the IEEE 1394 device is properly inserted into the device and into the connector on the computer.

Ensure that the IEEE 1394 device is enabled in system setup — See "System Setup Options" in the *Dell Technology Guide* on your computer or at **support.dell.com**.

Ensure that the IEEE 1394 device is recognized by Windows —

Windows Vista:

1. Click **Start** → **Control Panel**→ **Hardware and Sound**.
2. Click **Device Manager.**

Windows XP:

1. Click **Start and click Control Panel**.
2. Under **Pick a Category**, click **Performance and Maintenance**→ **System**→ **System Properties** → **Hardware**→ **Device Manager**.

If your IEEE 1394 device is listed, Windows recognizes the device.

If you have problems with a Dell IEEE 1394 device — Contact Dell (see Contacting Dell).

If you have problems with an IEEE 1394 device not provided by Dell — Contact the IEEE 1394 device manufacturer.

Lockups and Software Problems

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at www.dell.com/regulatory_compliance.

The computer does not start up

Check the diagnostic lights — See Diagnostic Lights.

Ensure that the power cable is firmly connected to the computer and to the electrical outlet.

The computer stops responding

NOTICE: You may lose data if you are unable to perform an operating system shutdown.

Turn the computer off — If you are unable to get a response by pressing a key on your keyboard or moving your mouse, press and hold the power button for at least 8 to 10 seconds (until the computer turns off), and then restart your computer.

A program stops responding

End the program —

1. Press <Ctrl><Shift><Esc> simultaneously to access the Task Manager.
2. Click the **Applications** tab.
3. Click to select the program that is no longer responding.
4. Click **End Task**.

A program crashes repeatedly

NOTE: Most software includes installation instructions in its documentation or on a floppy disk, CD, or DVD.

Check the software documentation — If necessary, uninstall and then reinstall the program.

A program is designed for an earlier Windows operating system

Run the Program Compatibility Wizard —

Windows Vista:

The Program Compatibility Wizard configures a program so that it runs in an environment similar to non-Windows Vista operating system environments.

1. Click **Start** → **Control Panel**→ **Programs**→ **Use an older program with this version of Windows.**
2. In the welcome screen, click **Next**.
3. Follow the instructions on the screen.

Windows XP:

The Program Compatibility Wizard configures a program so that it runs in an environment similar to non-XP operating system environments.

1. Click **Start**→ **All Programs**→ **Accessories**→ **Program Compatibility Wizard**→ **Next**.
2. Follow the instructions on the screen.

A solid blue screen appears

Turn the computer off — If you are unable to get a response by pressing a key on your keyboard or moving your mouse, press and hold the power button for at least 8 to 10 seconds (until the computer turns off), and then restart your computer.

Other software problems

Check the software documentation or contact the software manufacturer for troubleshooting information —

- Ensure that the program is compatible with the operating system installed on your computer.
- Ensure that your computer meets the minimum hardware requirements needed to run the software. See the software documentation for information.
- Ensure that the program is installed and configured properly.
- Verify that the device drivers do not conflict with the program.
- If necessary, uninstall and then reinstall the program.

Back up your files immediately.

Use a virus-scanning program to check the hard drive, floppy disks, CDs, or DVDs.

Save and close any open files or programs and shut down your computer through the Start menu.

Memory Problems

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at www.dell.com/regulatory_compliance.

If you receive an insufficient memory message —

- Save and close any open files and exit any open programs you are not using to see if that resolves the problem.
- See the software documentation for minimum memory requirements. If necessary, install additional memory (seeMemory).
- Reseat the memory modules (seeMemory) to ensure that your computer is successfully communicating with the memory.

- Run the Dell Diagnostics (see Dell Diagnostics).

If you experience other memory problems —

- Reseat the memory modules (see Memory) to ensure that your computer is successfully communicating with the memory.
- Ensure that you are following the memory installation guidelines (see Replacing a Memory Module).
- Ensure that the memory you are using is supported by your computer. For more information about the type of memory supported by your computer, see Memory.
- Run the Dell Diagnostics (see Dell Diagnostics).

Network Problems

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at www.dell.com/regulatory_compliance.

Check the network cable connector — Ensure that the network cable is firmly inserted into the network connector on the back of the computer and the network jack.

Check the network lights on the back of the computer — If the link integrity light is off, no network communication is occurring. Replace the network cable.

Restart the computer and log on to the network again.

Check your network settings — Contact your network administrator or the person who set up your network to verify that your network settings are correct and that the network is functioning.

Run the Hardware Troubleshooter — See Hardware Troubleshooter.

Power Problems

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at www.dell.com/regulatory_compliance.

If the power light is green and the computer is not responding — See Diagnostic Lights.

If the power light is blinking green — The computer is in standby mode. Press a key on the keyboard, move the mouse, or press the power button to resume normal operation.

If the power light is off — The computer is either turned off or is not receiving power.

- Reseat the power cable in the power connector on the back of the computer and the electrical outlet.
- Bypass power strips, power extension cables, and other power protection devices to verify that the computer turns on properly.
- Ensure that any power strips being used are plugged into an electrical outlet and are turned on.
- Ensure that the electrical outlet is working by testing it with another device, such as a lamp.
- Ensure that the main power cable and front panel cable are securely connected to the system board (see Memory).

If the power light is blinking amber — The computer is receiving electrical power, but an internal power problem may exist.

- Ensure that the voltage selection switch is set to match the AC power at your location (if applicable).
- Ensure that all components and cables are properly installed and securely connected to the system board (seeSystem Board).

If the power light is steady amber — A device may be malfunctioning or incorrectly installed.

- Ensure that the processor power cable is securely connected to the system board power connector (POWER2) (see System Board).
- Remove and then reinstall all memory modules (see Memory).
- Remove and then reinstall any expansion cards, including graphics cards.

Eliminate interference — Some possible causes of interference are:

- Power, keyboard, and mouse extension cables
- Too many devices connected to the same power strip

- Multiple power strips connected to the same electrical outlet

Printer Problems

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at www.dell.com/regulatory_compliance.

NOTE: If you need technical assistance for your printer, contact the printer's manufacturer.

Check the printer documentation — See the printer documentation for setup and troubleshooting information.

Ensure that the printer is turned on.

Check the printer cable connections —

- See the printer documentation for cable connection information.
- Ensure that the printer cables are securely connected to the printer and the computer.

Test the electrical outlet — Ensure that the electrical outlet is working by testing it with another device, such as a lamp.

Verify that the printer is recognized by Windows —

Windows Vista:

1. Click **Start** → **Control Panel**→ **Hardware and Sound**→ **Printer**.
2. If the printer is listed, right-click the printer icon.
3. Click **Properties and click Ports**.
4. Adjust the settings, as needed.

Windows XP:

1. Click **Start**→ **Control Panel**→ **Printers and Other Hardware**→ **View installed printers or fax printers**.
2. If the printer is listed, right-click the printer icon.
3. Click **Properties**→ **Ports**. For a parallel printer, ensure that the **Print to the following port(s):** setting is **LPT1 (Printer Port)**. For a USB printer, ensure that the **Print to the following port(s):** setting is **USB**.

Reinstall the printer driver — See the printer documentation for information on reinstalling the printer driver.

Scanner Problems

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at www.dell.com/regulatory_compliance.

NOTE: If you need technical assistance for your scanner, contact the scanner's manufacturer.

Check the scanner documentation — See the scanner documentation for setup and troubleshooting information.

Unlock the scanner — Ensure that your scanner is unlocked (if the scanner has a locking tab or button).

Restart the computer and try the scanner again.

Check the cable connections —

- See the scanner documentation for information on cable connections.
- Ensure that the scanner cables are securely connected to the scanner and the computer.

Verify that the scanner is recognized by Microsoft Windows —

Windows Vista:

1. Click **Start** → **Control Panel**→ **Hardware and Sound**→ **Scanners and Cameras**.
2. If the scanner is listed, Windows recognizes the scanner.

Windows XP:

1. Click **Start**→ **Control Panel**→ **Printers and Other Hardware**→ **Scanners and Cameras**.
2. If your scanner is listed, Windows recognizes the scanner.

Reinstall the scanner driver — See the scanner documentation for instructions.

Sound and Speaker Problems

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at www.dell.com/regulatory_compliance.

No sound from speakers

NOTE: The volume control in MP3 and other media players may override the Windows volume setting. Always check to ensure that the volume on the media player(s) has not been turned down or off.

Check the speaker cable connections — Ensure that the speakers are connected as shown on the setup diagram supplied with the speakers. If you purchased a sound card, ensure that the speakers are connected to the card.

Ensure that the subwoofer and the speakers are turned on — See the setup diagram supplied with the speakers. If your speakers have volume controls, adjust the volume, bass, or treble to eliminate distortion.

Adjust the Windows volume control — Click or double-click the speaker icon in the lower-right corner of your screen. Ensure that the volume is turned up and that the sound is not muted.

Disconnect headphones from the headphone connector — Sound from the speakers is automatically disabled when headphones are connected to the computer's front-panel headphone connector.

Test the electrical outlet — Ensure that the electrical outlet is working by testing it with another device, such as a lamp.

Eliminate possible interference — Turn off nearby fans, fluorescent lights, or halogen lamps to check for interference.

Run the speaker diagnostics.

Run the Hardware Troubleshooter — See Hardware Troubleshooter.

No sound from headphones

Check the headphone cable connection — Ensure that the headphone cable is securely inserted into the headphone connector (see "Front View" in the *Setup and Quick Reference Guide*).

Adjust the Windows volume control — Click or double-click the speaker icon in the lower-right corner of your screen. Ensure that the volume is turned up and that the sound is not muted.

Touch Pad or Mouse Problems

Check the touch pad settings —

1. Click **Start**→ **Control Panel**→ **Printers and Other Hardware**→ **Mouse**.
2. Try adjusting the settings.

Check the mouse cable — Shut down the computer. Disconnect the mouse cable, check it for damage, and firmly reconnect the cable.

If you are using a mouse extension cable, disconnect it and connect the mouse directly to the computer.

To verify that the problem is with the mouse, check the touch pad —

1. Shut down the computer.
2. Disconnect the mouse.
3. Turn on the computer.
4. At the Windows desktop, use the touch pad to move the cursor around, select an icon, and open it.

   If the touch pad operates correctly, the mouse may be defective.

Check the system setup program settings — Verify that the system setup program lists the correct device for the pointing device option. (The computer automatically recognizes a USB mouse without making any setting adjustments.) For more information on using the system setup program, see the *Dell Technology Guide* on your computer or at **support.dell.com**.

Test the mouse controller — To test the mouse controller (which affects pointer movement) and the operation of the touch pad or mouse buttons, run the Mouse test in the **Pointing Devices** test group in the Dell Diagnostics (see Dell Diagnostics).

Reinstall the touch pad driver — See "Reinstalling Drivers and Utilities" in the *Setup and Quick Reference Guide.*

Video and Monitor Problems

CAUTION: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at www.dell.com/regulatory_compliance.

NOTICE: If your computer came with a PCI graphics card installed, removal of the card is not necessary when installing additional graphics cards; however, the card is required for troubleshooting purposes. If you remove the card, store it in a safe and secure location. For information about your graphics card, go to **support.dell.com.**

The screen is blank

NOTE: For troubleshooting procedures, see the monitor's documentation.

The screen is difficult to read

Test the electrical outlet — Ensure that the electrical outlet is working by testing it with another device, such as a lamp.

Check the diagnostic lights — See Diagnostic Lights.

Rotate the display to eliminate sunlight glare and possible interference.

Adjust the Windows display settings —

Windows Vista:

1. Click **Start** → **Control Panel**→ **Hardware and Sound**→ **Personalization**→ **Display Settings**.
2. Adjust **Resolution** and **Colors settings,** as needed.

Windows XP:

1. Click **Start**→ **Control Panel**→ **Appearance and Themes**.
2. Click the area you want to change or click the **Display** icon.
3. Try different settings for **Color quality** and **Screen resolution**.

Only part of the display is readable

Connect an external monitor —

1. Shut down your computer and connect an external monitor to the computer.
2. Turn on the computer and the monitor and adjust the monitor brightness and contrast controls.

If the external monitor works, the computer display or video controller may be defective. Contact Dell (see Contacting Dell).

Dell Technical Update Service

The Dell Technical Update service provides proactive e-mail notification of software and hardware updates for your computer. The service is free and can be customized for content, format, and how frequently you receive notifications.

To enroll for the Dell Technical Update service, go to **support.dell.com / technicalupdate**.

Dell Support Utility

The Dell Support Utility is installed on your computer and available from the Dell Support, , icon on the taskbar or from the **Start** button. Use this support utility for self-support information, software updates, and health scans of your computing environment.

Accessing the Dell Support Utility

Access the Dell Support Utility from the icon on the taskbar or from the **Start** menu.

If the Dell Support icon does not appear in your taskbar:

1. Click **Start**→ **All Programs**→ **Dell Support**→ **Dell Support Settings**.
2. Ensure that the **Show icon on the taskbar** option is checked.

NOTE: If the Dell Support Utility is not available from the **Start** menu, go to **support.dell.com** and download the software.

The Dell Support Utility is customized for your computing environment.

The icon in the taskbar functions differently when you click, double-click, or right-click the icon.

Clicking the Dell Support Icon

Click or right-click the icon to perform the following tasks:

- Check your computing environment.
- View the Dell Support Utility settings.
- Access the help file for the Dell Support Utility.
- View frequently asked questions.
- Learn more about the Dell Support Utility.
- Turn the Dell Support Utility off.

Double-Clicking the Dell Support Icon

Double-click the icon to manually check your computing environment, view frequently asked questions, access the help file for the Dell Support Utility, and view Dell Support settings.

For more information about the Dell Support Utility, click the question mark (**?**) at the top of the **Dell Support** screen.

Back to Contents Page

Back to Contents Page

Wireless Local Area Network (WLAN) Card

Dell™ Latitude™ E4300 Service Manual

- Removing a WLAN Card
- Replacing a WLAN Card

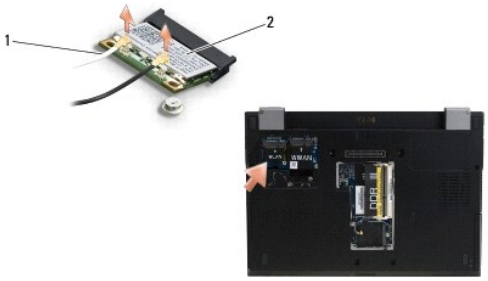
CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

Your computer supports a Wireless Local Area Network (WLAN) card. If you ordered a WLAN card with your computer, the card is already installed.

Removing a WLAN Card

1. Follow the instructions in What You Need to Know For Your Safety.
2. Close the display and turn the computer upside-down.
3. Loosen the captive screw on the WLAN/WWAN cover.
4. Remove the WLAN/WWAN cover.

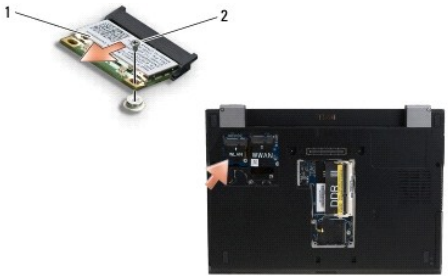
5. Disconnect the antenna cables from the WLAN card.



1	antenna cable connectors (2)	2	WLAN card

6. Remove the M2 x 3-mm screw securing the WLAN card.

   The card pops up to a 30-degree angle.



1	WLAN card	2	M2 x 3-mm screw

7. Slide the WLAN card out at a 30-degree angle from its connector.

Replacing a WLAN Card

NOTICE: The connectors are keyed to ensure correct insertion. If you feel resistance, check the connectors on the card and on the system board, and realign the card.

NOTICE: To avoid damage to the WLAN card, ensure the cables are not under the card when you place the card.

NOTE: The card slot is marked by a WLAN label. Do not install the WLAN card into any other card slot.

NOTE: This procedure assumes that you have completed the removal procedure first.

1. Slide the WLAN card into the connector at a 30-degree angle to the system board.
2. Press the card down onto the alignment post and hold it in position.
3. Replace the M2 x 3-mm screw to secure the WLAN card.
4. Reconnect the appropriate antenna cables to the WLAN card:

   If the WLAN card has two triangles on the label (white and black), connect the white antenna cable to the connector labeled "main" (white triangle), and connect the black antenna cable to the connector labeled "aux" (black triangle). Store the remaining gray cable in the chassis next to the card.

   If the WLAN card has three triangles on the label (white, black, and gray), connect the white antenna cable to the white triangle, connect the black antenna cable to the black triangle, and connect the gray antenna cable to the gray triangle.

NOTE: Ensure that the antenna cables are routed through the cable channel.

5. Replace the WLAN/WWAN cover.
6. Follow the instructions in After Working on Your Computer.

Back to Contents Page

Back to Contents Page

Wireless Wide Area Network (WWAN) Card

Dell™ Latitude™ E4300 Service Manual

- Removing a WWAN Card
- Replacing a WWAN Card

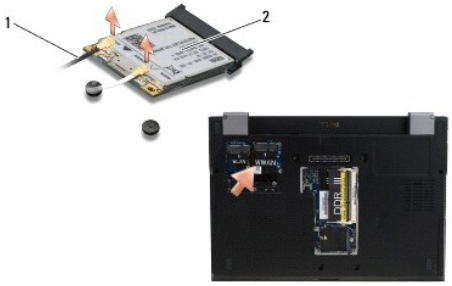
CAUTION: Before working inside the computer, read the safety information that shipped with the computer. For additional safety best practices information, see the Regulatory Compliance Homepage on www.dell.com at: www.dell.com/regulatory_compliance.

Your computer supports a Wireless Wide Area Network (WWAN) card. If you ordered a WWAN card with your computer, the card is already installed.

Removing a WWAN Card

1. Follow the instructions in What You Need to Know For Your Safety.
2. Close the display and turn the computer upside-down.
3. Loosen the captive screw on the WLAN/WWAN cover.
4. Remove the WLAN/WWAN cover.

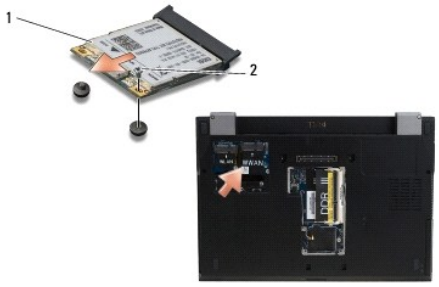
5. Disconnect the antenna cables from the WWAN card.



1	antenna cable connectors (2)	2	WWAN card

6. Remove the M2 x 3-mm screw securing the WWAN card.

   The card pops up to a 30-degree angle.



1	WWAN card	2	M2 x 3-mm screw

7. Slide the WWAN card out of its connector.

Replacing a WWAN Card

NOTICE: The connectors are keyed to ensure correct insertion. If you feel resistance, check the connectors on the card and on the system board, and realign the card.

NOTICE: To avoid damage to the WWAN card, ensure the cables are not under the card when you click the card into place.

NOTICE: Install the WWAN card into the compartment shown in the above photograph. Do not install it in any other location.

1. Slide the WWAN card into the connector at a 30-degree angle.
2. Press the card down onto the alignment post and hold in position.
3. Replace the M2 x 3-mm screw to secure the card.
4. Connect the white antenna cable to the connector labeled "main" (white triangle), and connect the black antenna cable to the connector labeled "aux" (black triangle).
5. Replace the WLAN/WWAN cover.
6. Follow the instructions in After Working on Your Computer.

Back to Contents Page